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CAN MOSCOW WIN THE WAR?

POLICY OF JAPAN IN THE ORIENT

THE COMMUNISTS OF CHINA

Vol. XXXIV

OCTOBER, 1938

No. 10

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ENGINEERING FINANCE COMMERCE

VOL. XXXIV SHANGHAI, OCTOBER, 1938 No. 10

Can Moscow Win the War?

Affairs in China have entered a new phase. There is some reason to-day to believe that the occupation by Japanese forces of Hankow and the Wu-Han region marks the closing scene in the last act of the great tragic drama in China. The fighting has neared an end, and the beginning of the long march back over the difficult uncertain road toward restoration of normal conditions must necessarily broaden the scope of the whole China scene. The great nations overseas now no longer can remain passive.

In certain phases of the fighting in central China, and even in some of the strife on the Yangtze, incidents disturbing to Chinese morale were brought to light, but it was in the unopposed march from Bias Bay of the comparatively small force of Japanese that captured Canton that the great myth of "Chinese unity," so long accepted implicitly abroad, was exploded. When this cherished illusion was shattered every chance that China would "resist to the last man" and win the war, disappeared. This disclosure astounded the outside world and shocked the whole Chinese nation.

It long has been legendary in the Far East that the real fighting men of China are the Southerners. They have ever been the world travellers of the nation, and they have ever been the most turbulent and articulate element in China. It followed, therefore, when news came of the Japanese landing at Bias Bay that all China and the outside world waited with confident expectancy, believing they would hear of acts of valorous resistance that would far outshine the deeds of the defenders of Shanghai and of those who opposed the relentless Japanese thrust in the mid-reaches of the Yangtze. The Japanese force that went into Canton with rifle barrels unsullied reported that the most serious resistance they encountered in their hundred-odd mile march from tide water came from the mosquitoes of the region.

Only An Illusion

Parenthetically, the writer ventures to suggest here that all this does not prove that the legend of the bravery of the Southern Chinese is untrue. It does prove, however, conclusively, that China has been no more united through recent times than it was back in 1926 when Chiang Kai-shek and his Russian advisers marched northward out of Canton at the head of an army to conquer a region alien to him and to found a new government in China. And in large measure it is by reason of this that open hostilities in China are nearing an end. The hope that China now can rely on guerilla warfare and can continue effective resistance, with disunity in the provinces, with outside communications broken, and with supply bases and transport routes in Japanese hands, is grotesque. If further resistance should be attempted, it can mean only further bloodshed and extended desolation along with even greater dislocation and paralysis of every normal wholesome activity of the country, Chinese and foreign, in nice accord with the best patterns of policy of the Comintern—and Moscow wins the war!

The air is filled with peace talk, in Japan, and in China. Rumors and reports are published and denied regarding the movements and the intentions of General Chiang Kai-shek, and about the leading personages of his regime. Leading Chinese statesmen have let it be known that China is willing to talk peace, and it has been announced that with the occupation of the Wu-Han cities Tokyo will offer peace terms. It is a foregone conclusion that Japan will insist upon recognition of her position as the dominant power of the Far East and that she will demand the elimination from China of all communistic influences. Beyond these two points it is wholly probable, and assuredly it will be for Japan's own best interests, to offer exceptionally generous terms to China—terms that will involve no permanent territorial encroachment and that will leave China's sovereignty intact. What Japan wants and what she has been fighting for, after all, is, first, security for her Empire and for her people, and, second, tranquil, friendly, and, if possible, profitable, relations with her neighbor. Such aims cannot be said to be unworthy, nor are they singular among the peoples of the planet.

A question that may or may not measure into some importance in the near future has to do with the personality of Chiang Kai-shek himself. Japanese leaders lately have reiterated the assertion that the Tokyo Government refuses to treat with Chiang Kai-shek. In this connection reports have been published in China and abroad that Chiang Kai-shek intends to resign and surrender the reins of his authority to Wang Ching-wei, long a stalwart in the ranks of the Kuomintang and now a high official in the councils of the regime that has just fled from Hankow.

It is not so long ago that at meetings in Central China of factions within the Kuomintang criticisms were directed at Chiang Kai-shek and methods to curtail his powers in the Government were discussed. Through the recent period of stress and warfare such attacks on the head of the Chinese Government have been suppressed to a degree, but they have not been silenced. Within the month one of the older party leaders and a former Foreign Minister, Mr. Eugene Chen, in a published article urged that changes that would strip Chiang Kai-shek of the power he has been wielding should be made.

Silence that is Significant

It is noteworthy that these attacks have not stirred up any special Chinese resentment in China and it is doubtless true that Chiang Kai-shek, far from having the unqualified support of those surrounding him, has difficult elements within his own entourage to deal with. Notably, it is known that a sour note in the harmony of the Chiang Kai-shek regime is sounded recurrently by the communist elements that have been introduced into the circle. Assuredly Chiang Kai-shek is much more of an idol abroad, and especially in the United States, than in his homeland. This is due in large measure to the cleverly directed and highly effective publicity that has been given through the past year, glorifying Chiang Kai-shek and Mme. Chiang Kai-shek as one measure to curry American sympathy for the Chinese cause. This publicity has been helped by the circumstance that Madame Chiang Kai-shek is a graduate of a leading girls' school in the United States. Her numerous activities in the affairs of government and her staunch loyalty to Chiang Kai-shek late in 1936, as detailed in newspapers everywhere at that time, when General Chiang was a captive of insubordinate troops at Sian in danger of losing his life, stirred immense interest and admiration abroad. This sentiment overseas, focussed on the picture of a loyal wife bravely struggling to aid her husband in a time of crisis, has been strengthened by personal communications in the form of addresses and published articles by Madame Chiang, all employed adroitly in the world-wide publicity campaign to win sympathy for China.

In analyzing the state of feeling toward Japan throughout the world a number of factors must be taken into account.

Sedulously and continuously has been presented to the outside world the spectacle of a ruthless mechanized military colossus of steel opposed to human flesh and blood in China. Writers and speakers have vied with each other in describing acts of Japanese soldiery flushed with blood-lust after weeks of fighting at the moment of victory, and these recitals enlarge and emphasize all the grim horrors that form a part of modern warfare, whether in Belgium, in Spain or in China—unspeakable things that have ever entered into and been a part of all Oriental warfare from the beginning of time.

In the flood of reports broadcast abroad of the air bombing of cities and of routes of transport Japanese mistakes have been magnified and those of the Chinese are glossed over. The memory of the attack on the *Ladybird* and the sinking of the *Panay* in the Yangtze, and the air attacks on Canton are kept vividly before the eyes of the public while the air bombing of a great American passenger liner miles at sea off the coast near Shanghai and the slaughter of thousands in congested centers in the streets of the International Settlement of Shanghai in repeated air raids are things all but forgotten. Ordinary world trade rivalries also have been used to serve an end in fomenting public opinion adverse to Japan. In the United States and Europe, and especially in the United Kingdom, those large commercial interests that chiefly have been feeling the sting of Japanese trade competition in world markets have been quick to avail themselves of a new weapon in the form of a boycott to check inroads of Japanese goods.

Tracing the Sources of It All

The well-oiled mechanism to spread and keep in motion this flood of propaganda was already set up and ready for operation in every corner of the world when the need to employ it arose. The control levers of this great half-hidden machine that produces effects in all parts of the world are in Moscow, in the quarters of the Comintern. This is the motive force that takes advantage of and uses for its own ends the upright citizen's indignant rage over news reports from the Far East, and, in the same manner it uses the cupidity of those Occidental commerical interests that clamor for a boycott of Japanese goods. Wherever the Communist doctrine is most firmly established and wherever red radicals march in force, there will be found the most unbridled and vitrolic denunciation of everything Japanese. The Japanese themselves are the first to admit that they have committed grievous errors and that criticisms of their acts are justified, but those citizens of the great democracies overseas who have been led to believe that everything Japanese is infamous and that all virtue abides with the Chinese simply are dupes of forces of whose existence even they are perhaps unaware.

Whole nations have had hysteria. Back at the time of the turn of the century two powerful American newspapermen in a simple commercial conflict started a great war. Joseph Pulitzer and William Randolph Hearst, particularly the latter, with their newspapers so played on the emotions of the country that public rage and indignation was whipped to a white heat. All sober considerations were swept away and the United States went to war with Spain. It has not been proved to this day how the *Maine* was sunk in Havana Harbor. Many can readily recall another great tide of public feeling not unlike that which preceded the war with Spain that swept over the country some twenty years ago. It was a traitorous and disloyal act then even to eat a German cheese sandwich. This emotional outburst, fostered largely by propaganda from overseas, swept the United States into the World War. When the ordinary American citizen is asked to-day why the United States fought Spain, or why the United States went into the World War, the reply usually is terse and emphatic. "The War to Free Cuba" and "The War to Save Democracy" are hollow phrases to-day. Cuba was not freed and democracy in this world has sunk to so low an ebb that it is flaunted and challenged derisively by powerful and dangerous adversaries. The American people, disillusioned to-day, know they were deluded and misled by artificial concepts to their bitter cost twice in the past, and this furnishes reason for the urge toward an isolationism that is probably unattainable. The question arises : Is the American public again today being misled ?

How the War Began

Causes for the warfare in China had their beginnings many years ago. The actual decision for war between China and Japan, however, was given late in December of 1936 at Sian when General Chiang Kai-shek capitulated to the Communists, saving his own life and safeguarding his power in direction of the Chinese Government by doing so. Then was brought to an end the conflict that had continued through eight years between the Chinese Government forces and the Communist army in China. Communist influence was then again brought into the highest councils of the Chinese Government in an alliance of mutual hatred and distrust, for Chiang Kai-shek has never loved the Russian, as his whole career denotes, and the Comintern can never forget that it was Chiang Kai-shek who nullified all the original ambitious plans to sovietize China after he had won power enough to do this with Russian assistance. At Sian, however, the Russians won back the foot-hold in China they had lost in 1927 when Chiang Kai-shek at Wuchang expelled the Communist leaders from the country and smashed the Soviet machine.

The Russian influence in the Chinese Government quickly made itself felt. The war with Japan was begun, some seven months after the Sian affair. Early in the conflict Chinese hopes were dashed when Chinese leaders discovered, too late, that they had been misled, for active armed assistance from the Soviets was not forthcoming. It appears that the Russian leaders in China had promised too much, and Russia could not or would not fulfil secret pledges, as the Soviet Ambassador Bogomoloff learned to his cost when he was recalled at that time to find himself in hot water in Moscow. Further, when the conflict had been carried into central China, and to Shanghai, every effort to embroil Britain or the United States in the fighting on the side of China, failed dismally. Chinese leaders came to realize quickly enough that they had been duped and misled into a plight from which there could be no drawing back. The youth of China, those lads who had been taught in their school rooms to shout words, meaning less to them, "Down with Imperialism !", and who in those same class rooms had been regimented and schooled in hatred of their neighbor, Japan, had to go on marching with guns in their hands, and to die in their thousands.

Keeping their Powder Dry

It is true that in the course of the fighting Russia did give a certain measure of ineffective assistance to the Chinese in the form of munitions, airplanes and a few air pilots. Without pause also, the Communists continue to give advice to, and as far as possible, to dominate the Chinese Government. The leaders of the Chinese Communist Army, the Eighth Route Army, are most articulate in the affairs of the government, but it is noteworthy that this Chinese Communist Army has not been conspicuous in the fighting against the Japanese. Its leaders have kept their Communist army clear of frontal engagements, seeking to stress its value of a guerilla force. Strategists may wonder if in this way the Communist power in China is "keeping its powder dry" against some future need such as might arise should the Chinese Government take steps a second time to break off an unhealthy alliance.

Soberer elements among China's leaders know that the time has come to stop the conflict, and it is to be hoped that their counsels will prevail. If under pressure of adverse influences surrounding him Chiang Kai-shek in compelled to continue to resist, then the future outlook for all interests in China is dark indeed. If the program of destruction could be worked out to logical ends, then all China would become "scorched earth," Japan would be crushed and her Empire dismembered, and every foreign interest in the Far East would be uprooted and destroyed. Then the Russian Bear, his strength unimpaired by any of the fighting, might walk to the Asian seaboard and look eastward over the Pacific with a sense of confidence.

In a recent public utterance at Chungking, Mr. Wang Ching-wei said that China is ready to talk peace. "If Japan," declared the Chairman of the Central Political Council, "will offer terms which are not such as to hamper the existence of the Chinese nation, we may accept them as the basis for discussion ; otherwise there is no room for mediation." At the time that the Japanese troops were marching into the Wu-Han region terms that the Japanese Government would offer after the occupation of Hankow were foreshadowed in authoritative quarters. These demands that Tokyo will put forward are well within the scope of the conditions for discussion of peace laid down by Mr. Wang Ching-wei. While Japanese leaders cling to the purpose of refusing to treat with Chiang Kai-shek, it

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Policy of Japan in the Orient*

By YUNOSUKE YASUKAWA, President of the Oriental Development Co.

With world Powers resorting one after another to various trade control measures such as import quotas, import license, exchange control and the barter system since the depression of 1920, the so-called economic bloc has become a world-wide tendency. The consequence has been that the world markets, monopolized by a few wealthy nations, have been closed to the "have-not" nations. In these circumstances, for Japan to strengthen economic ties with Manchoukuo and China is but natural without any ulterior designs. It only means that Japan has been forced to do so.

The economic relations between Japan and Manchoukuo have grown intimate year after year. Whereas both outgoing and incoming shipments have been increasing remarkably in the trade with Korea and Formosa, imports from Manchoukuo have failed to keep pace with the rapid gain in exports thereto. It naturally follows that the new State, including the Kwantung Leased Territory, has not yet occupied the important position as supplier of foods and materials that she was hoped to have done earlier. The trade index figures, calculated on the basic figure of 100 for 1929 are quoted as follows:

	(A)	(B)	(C)	(D)	(E)
Japan's Exports :					
1935	158	132	226	53	117
1936	166	150	264	57	126
1937	185	172	325	63	149
Japan's Imports :					
1935	168	156	100	85	111
1936	205	174	110	97	125
1937	234	198	135	90	170

NOTE :—(*a*) Korea ; (*b*) Formosa ; (*c*) Manchoukuo ; (*d*) China ; (*e*) Total exports or imports.

Trade Shrinks

As may be noted in the above table, the Sino-Japanese trade has been shrinking of late in both movements. Especially noteworthy is the drop in Japan's shipments to China. This is partly because the Nationalist Government has set up high tariff barriers against our goods and partly because the Chinese masses have lost much of their purchasing power due to the recent business depression there. In my opinion, our economic co-operation with 400,000,000 Chinese people, if materialized, not only would contribute a great deal to the development of industry and trade here but also would be the only way for the Chinese to get out of their present difficulties.

Nevertheless, it must not be overlooked that the economic bloc among the three Far Eastern nations, even if brought into being in an ideal form, cannot necessarily attain self-sufficiency in all sorts of necessary goods. Among major import items of Japan, for instance, iron, coal, food, fertilizer and salt would be supplied sufficiently in this bloc, and part of the needs would be met in the case of cotton, pulp, leather, *et cetera*. But it cannot be anticipated that this bloc would become self-supplying and self-supporting in petroleum, wool, rubber, copper, lead, tin and nickel. It would be absurd for us to pin too much hope on the eventual formation of the tripartite bloc. Thus, efforts must be directed also toward maintenance and expansion of old and new markets for our commodities and intensification of economic ties with other nations.

In the first half of the current year exports totalled Y.1,287,000,000, or a decline of 20 per cent and imports Y.1,483,000,000, or a drop of 34 per cent when compared with the corresponding period of last year. In sharp contrast with a marked gain of 40 per cent in exports to Manchoukuo and the Kwantung Leased Territory, shipments to other foreign countries suffered a shrinkage of 33 per cent, by half to the United States and some Central American countries, by three-fifths to the Dutch East Indies, and by three-fourths to the Straits Settlements. Among many factors responsible for such a trade setback some important points include:

Reasons for Setback

(1). The boycott drive against Japanese goods which has been rampant among Chinese residents in the South Seas. Although no formal boycott has been taken up in the United States, many American traders have refrained from buying our goods for fear of further aggravation of American sentiment against Japan.

(2). With the demand of the military services for munitions increasing markedly, the exporting capacity of local heavy and chemical industries has suffered accordingly to no small degree. And peacetime industries have been obliged to curtail their capacities due to the Government control on industrial funds and the flow of labor into munitions factories.

(3). Due to the strict restriction on raw materials and the subsequent soaring of their prices at home, the production cost of Japanese goods has been boosted above the level of foreign goods, with the result that not a few markets, which had been cultivated after years of labor, have been snatched away by foreign interests.

(4). Irked against Japan in connection with the China Incident, British banking interests have denied financing contracts to Japanese traders, and the latter have been unable to buy up foreign materials or to sell their goods on long-term credit in many cases.

If imports in the second half are estimated at Y.1,140,000,000, the total purchases this year would be Y.2,620,000,000 or a sharp decline of Y.1,330,000,000 or 34 per cent as compared with last year's. The import balance, if any, would not reach any seriously large figure. But in this calculation, Manchoukuo, the Kwantung Leased Territory and China are considered as foreign countries. If these markets are considered as members of the yen bloc and excluded from the computation, the adverse balance would be as much as Y.250,000,000 in the first six months and a still larger figure for the whole year.

Foreign Funds Lacking

Because Japan cannot get foreign funds by shipping her goods to her economic allies in the Far East, it is but natural that she is planning to reduce shipments to those members of her bloc just as she is drastically retrenching her own home consumption. It must be remembered, however, that further consolidation of this bloc is an inevitable course for this nation to follow and the only way toward peace and prosperity in this part of the world. In case Japan reduces her shipments of capital goods necessary for development and rehabilitation works on the continent, foreign traders would take the opportunity to open up markets for their manufactures. And if shipments of daily necessaries from Japan are curtailed, the masses there would naturally suffer from the resulting shortage of goods. Therefore, appropriate measures must be taken to ship a sufficient amount of capital goods and daily necessaries, and, at the same time, to buy from the continent those materials which have so far been supplied from foreign countries.

The invisible trade of the nation, too, has been affected to no small degree by the current hostilities. Receipts from the shipping business declined from 20 to 30 per cent last year due to the shrinkage of merchandise trade above mentioned. And profits from Japanese enterprises abroad are most likely to drop sharply for the reason that spinning mills in China have been severely damaged and rubber plantations in the South Seas have been hit by the

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*Translated from the *Kokusai Chishiki and Hyoron* by *Contemporary Opinions*.

The Communists of China*

In analysing basic forces that have driven China to adopt and pursue her present course of action against Japan, the power and influence of Chinese communists assume more importance than any other forces and factors. It has been rightly pointed out by observers that to clarify the tripartite relationship between the Chinese communist party, the Chinese Red Army and the Nationalist government with the Communist International as its background is essential in grasping the true significance of the present armed conflict between Japan and China.

An attempt is made here, therefore, to trace somewhat historically the activities and movements of Chinese communists from the years preceding the occurrence of the incident near Marco Polo Bridge down to the present time, particularly with reference to the aforementioned relationship.

The beginning was at Moscow.

To induce the Chinese people to organize a powerful anti-Japanese popular front and to complete thereby preparations for a war against Japan have been consistent policies of the Comintern and the Soviet Union since the summer of 1935, when the 7th Congress of the Third International voted for the highest principles underlying their Chinese policy.

The skilful working of the Moscow government either directly or indirectly through the Chinese communists resulted in the actual organization in China of the popular front against Japan, which has subsequently been converted into the national front. The Kuomintang became alined with those anti-Japanese forces, in consequence of the Sian incident.

Instructions from Moscow

At the time when this anti-Japanese alinement was on the way to completion, the incident near Marco Polo Bridge broke out. The Comintern, therefore, lost no time in taking action; within a week after the outbreak, instructions from Moscow were received by the Chinese communists in rapid succession. The following were their essential points:

(1) Avoidance by any means of a local settlement of the incident and development of it into a comprehensive, frontal clash between China and Japan.

(2) All available means to be adopted. Those leaders betraying the cause of emancipating China by effecting local settlement—those, for example, taking such a step as averting a frontal clash with Japan by separating North China from the rest of the Republic—or by making concessions to Japan to be eradicated.

(3) Instigation of the lower classes to take such actions as will compel the Nationalist government to wage war against Japan.

(4) The Chinese Communist Party to enlarge the anti-Japanese boycott on a nationwide scale. Third powers to be checked from aiding Japan by threat of boycotts.

(5) The Communist Army to co-operate with the Nationalist Army while effectively practising partisan warfare.

(6) The party to try to win subalterns, non-commissioned officers, soldiers in the armies and the masses over to communism so that it may outrival the Nationalists in strength and popularity.

Acting on these instructions, Chou En-lai, representative of the Chinese communists, held conferences with General Chiang and made proposals regarding the release of political offenders, reorganization of the Red Army and other important matters. Thus, in the latter part of September the Nationalist-Communist collaboration was formally effected.

Activities of the Moscow organization have by no means been confined to the issuing of the above-stated instructions. Further instructions have been sent as occasions have demanded; anti-Japanese propaganda has been conducted in China by Chinese and Russian agents and in other parts of the world by communists in America, France and other countries. Nor can the activities of the Moscow government be taken lightly.

In particular, since the conclusion of the Sino-Soviet Non-Aggression Agreement on August 21, 1937, its aid to the Nationalist government, as is widely known, has become intensified and overt.

Sian Incident and Communists

Analysis thus far reveals that the Sian incident constitutes an important approach in establishing the essential significance of the China Affair. It is pertinent, therefore, to give a detailed account of how the Chinese communists took advantage of the Sian coup and of the consequent development of the Chinese situation.

This incident, which broke out on December 12, 1936, was settled in less than two months in two steps: the first with the return of the released General Chiang to Nanking on December 25, 1936, and the second with the entry of the Nanking forces into the walled city of Sian on February 8, 1937. This apparently simple outline of the incident made many observers view it at that time as none other than a transaction between Chinese war-lords. Without clandestine activities of the communist and popular front leaders, it might have remained so.

Originally, the communist leaders were divided in their opinion as to how the incident could be used to advantage. One group held that the opportunity be seized for the immediate overthrow of the Nationalist Party and government, taking the life of Chiang Kai-shek. This view, known as the internal war policy, was advocated by Chang Kuo-tao and radicals then in Shanghai and in Sian, such as Miao Chien-chin and Sung Ming-chin and others who were under the former's influence.

The other group, led by Mao Tse-tung, Chu Te, and Chou En-lai, maintained that Chiang Kai-shek be persuaded to accept the policy of association with the Soviet Union, collaboration with the communists, and united resistance to Japan, a policy known as the peace policy.

The Comintern, however, sided with the latter policy and sought to utilize Chiang Kai-shek in carrying on its sinister designs.

Accordingly, Chou En-lai travelled to Sian, representing the peace group. The results of his activities there were the surrender of the Chinese dictator to the Comintern and the Chinese communists and the conversion of the popular front into the united national front against Japan. The latter proved to be an important move in preparation for the present hostilities.

Thus the eight so-called Chang-yang proposals presented to the captured General at Sian functioned thereafter as the guiding principles directing the course of political developments in China. The historic proposals presented by the communists to the 3rd Plenary meeting of the Central Executive Committee of the Kuomintang on February 10, 1937, were the outcome of the aforementioned maneuvering of the Moscow organization and of the endeavors of Chinese communist leaders.

Proposals, Pledges, Conditions

These proposals were: (1) suspension of civil wars and concentration of national strength for united resistance to external enemies; (2) freedom of speech, assembly and organization, and release of political prisoners; (3) convocation of a congress of all parties, military groups and organizations in order to concentrate all human resources for carrying out the salvation of the country; (4) immediate accomplishment of the preparatory work for a war of resistance against Japan; (5) improvement of the living conditions of the people at large. These proposals were supplemented by the following pledges concerning alterations of the Communist policies conditional on the Nationalists' determining national policies along the lines of the proposals.

The pledges were: (1) cessation of civil warfare against Nationalist armies; (2) changing the Soviet government into the government of the Special Region of the Republic of China, and the Red Army into the National Revolutionary Army under the control of the Central government and its military affairs council; (3) adoption and enforcement of a thoroughly democratic system of universal suffrage within the areas coming under the jurisdiction of the government of the Special Region; (4) cessation of the policy of expropriating landed property; (5) carrying out of the program of the united national front against Japan. Thereupon the government and the party at Nanking, both of which were under the restraint of the eight Chan-yang proposals, made public their intention to admit the communists to their camp, at the 3rd Plenary meeting of the Central Executive Committee of the Party which began five days later, provided that the latter carried out the four major terms listed below.

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*From the October issue of the *Tokyo Gazette*

The conditions were: (1) abolition of the Red Army; (2) dissolution of the Soviet government; (3) cessation of communist propaganda; (4) discontinuance of the class struggle. Faithful observance of the Sanmin Principles was also added to the above conditions as had been stated in former occasions.

The reaction of the communists to these conditions was precisely as had been expected. As a matter of fact, there were to be no conditions that could not be agreed to by them. For the Chinese Communist Party, after the adoption of the new strategy of 1935, was to all intents and purposes a new organization, and the Soviet Union or the Comintern, the real power behind, was determined, at all costs, to gain China over to its side. Consequently, negotiations for collaboration between the two camps were successfully started at Sian between their representatives.

Action is Taken

The fact, however, cannot be overlooked that in those four months after the 3rd Plenary meeting, the only thing the two parties did by way of carrying out the terms of collaboration was cessation of military operations against the Red forces on the part of the Nanking government. Both parties were apparently kept busy trying to prevail upon opposition within their respective camps; that is to say, the organization of the national front against Japan has been on the way but not quite completed as yet.

In the meantime, however, action was taken by impatient officers and men of the 29th Army in North China. And this incident served as an impetus for accelerating collaboration and alinement of the two camps against Japan. Accordingly, political offenders were released and the reorganization of the Red Army was effected as proposed by the communists.

Thus the 8th Route National Revolutionary Army came into being on August 22, 1937, as an integral part of the Nationalist forces against Japan. General Chu Te and General Peng Te-huai were appointed commander-in-chief and vice-commander respectively on August 25.

On September 22, the Communists sent a statement from Yenan, Shensi province, pledging and calling for simple-hearted co-operation and united resistance to Japan, and the Kuomintang made public on the following day an informal statement of response in the name of General Chiang Kai-shek, thereby publicly declaring the completion of the Nationalist-Communist collaboration. It was just nine months after the occurrence of the Sian revolt.

At the time of reorganization of the Red Army, its main force under direct command of Generals Chu Te and Peng Te-huai, which was 50,000 strong, was concentrated in an area to the west of Taiyuan. On the Shanghai front a force of 10,000 strong, under command of General Ho Lung, was concentrated in the north-eastern part, belonging to the 4th Route Army and forces of about the same strength, under command of Generals Hsiang Ying and Chen I, in the southern part. There was also a force under General Chang Ting-cheng on the Fukien-Kwangtung border, which was reorganized as a part of the 57th Division.

Besides these, there were forces which had not been reorganized. One was a force under Liu Ying on the Chekiang-Fukien-Anhwei-Kiangsi border; others, that under General Fu Chiu-tao on the Kiangsi-Hunan border, that under Kao Chun-ting on the Hupei-Anhwei-Honan border, and that of 10,000 strong at the communist original base in Shensi province.

Of all these forces, which total some 100,000, 75 per cent have been reorganized into the Nationalist Government Army.

Achievements of the communist forces after their participation in the current hostilities, though exaggerated by Chinese propaganda which has mostly been in the hands of communists agents, have scarcely been noticeable.

It is quite natural that armed forces as poorly equipped as they are should prove to be of insignificant military strength in modern warfare.

The communists do not intend for their armed strength to be impaired by hard fighting.

The 8th Route Army has never taken active part, therefore, in any major battles, since participating in engagements at Pinghsingkuan, Niangtzekuan and Hsinkouchen in Shansi province in September and October last year. They are indulging in guerrilla warfare, which forms their speciality together with propaganda.

Thus the fighting strength of the main force of the Communist Army, though not originally formidable, has largely been preserved.

The chief communist contribution to the Chinese resistance to Japan is propaganda, which is in reality an essential part of modern warfare. Their activities along that line preceding and following the incident near Marco Polo Bridge have already been reviewed.

Their activity known as the "work for soldiers," however, is worth noting in this connection as illustrating how educational institutions and intellectual classes have been mobilized for communist propaganda.

This work for soldiers was conducted by members of the Chinese Communist Youth League and students with Chinghua, Chiaotung and Peking Universities in Peking and Fulan School in Tientsin as bases of their activities.

Their leaders were Profs. Too Hsi-sheng and Shang Chung-i and Liu Yuan-ju, wife of the latter. The chief objective of their activities, as previously stated, was the 29th Army, which was responsible for the North China incident.

Many Organizations Formed

Communist activities following the outbreak of hostilities in influencing men and women in all walks of life to set up organizations for the purpose of promoting "war of resistance," "national salvation," "supporting soldiers," "wartime activities and service," "activities at the front," and "activities for doing away with traitors" have also constituted an important phase of their propaganda.

As a result, more than 120 such organizations came into being in Shanghai alone during the period of four months after the outbreak. Their fields include the cultural, educational, religious, industrial, and educational; their constituencies take in almost all circles of society, including women and even children. Among them are found such outstanding names as: Kuo Mo-jo, Mao Tun, Chang Nai-chi, Tson Too-fen, Cheng Chento, Shih Liang, Wang Hsiao-lai, Sung Ching-ling, Ho Hsiang-ning, Yang Hu, Tu Yueh-sheng, Pan Kung-chan, and Chen Sao-yu. Of these organizations, the Association for Supporting Resistance to Enemies is the most influential.

Methods of communist propaganda have mostly been through publications, lectures (including radio broadcasts), pictures, songs, various behind-the-line activities, popular education, and campaigns for defence and other funds. As for the organs for propaganda, the Chiuwangjihpoo (the *National Salvation Daily*) is representative. Cartoons and illustrated magazines have also been popular.

Historical Background

Success of the new tactics in a few years as has been described in the foregoing may be a thing almost incredible to those who are not familiar with the historical background of the present Far Eastern policy of the Moscow government.

The initiation of its movement for Bolshevizing China dates back in reality to the Karakhan Statement of July 25, 1919.

Having failed in the movement in Europe, the communists turned attention to the Orient, selecting China as their immediate objective. They saw in China a rising tide of nationalistic and anti-imperialistic movements, a condition which was highly favorable for communist propaganda.

The above-mentioned statement of Ambassador Karakhan declaring the abolition of unequal treaties and abandonment of rights and interests to which the Soviet government succeeded was a move designed to regain the confidence of the Chinese government and people with a view to facilitating its eastward penetration.

This program worked well; and in the following year, 1920, the Chinese Communist Party or the Chinese branch of the 3rd International was organized.

Formation of the united front for the national revolution in collaboration with the Kuomintang was the second step. Although this precarious union was short-lived, the organization of laborers and farmers for communist purposes resulted in the creation of the Chinese Red armies and Soviet areas, developing finally into the Chinese Soviet Republic.

Against this State within the State, the Central government waged several wars with the result that the former was brought to the point of collapse.

The communists, however, regained their power and influence which has a background of 17 years, with the capture of the dictator of the Nationalist government.

Thus they are now directing all anti-Japanese forces in China in action against Japan; they are driving China to self-destruction

Red Wolf in Sheep's Clothing*

The Comintern, described in its official organ as the "general staff of world revolution," has been very busy of late and there have been frequent signs that it is changing rôles, not for the first time, with the Moscow Foreign Office and being raised at M. Stalin's behest from a state of subsidiary importance.

Formed on March 4, 1919, it filled its first few years, Zinovieff acting as its nurse, with loud challenges to every land in the confident determination to bring about a quick series of revolutions and establish a universal Soviet regime. Adolescence culminated in the fierce program, of 1928, concluding with the words: "Let the dominating classes tremble!" This program drawn up by Bukharin and published in several languages, was the last "open" challenge to all the countries of the world at a single bout. The new Soviet diplomacy forced the Comintern into a relatively furtive existence of masked activity, which led in 1934 to the crowning shame of having to condone, approve, and explain the entry of Soviet Russia into the League of Nations. During this slide Stalin had procured for himself personally the command of all things in Moscow, and since then the Comintern has had no openly proclaimed "president" but merely a staff of secretaries and "presidium," through whom Stalin, the tacitly recognized president, dictates Comintern strategy and tactics in conformity with the requirements of his commissariat of foreign affairs. His guiding principle was that the five-year-plan system should turn the Soviet Union into a citadel, protected by the invincible Red Army, from which the general staff of world revolution would create and control "fronts" for civil war in "bourgeois countries."

Activities are Masked

The present "adult" stage dates from entry into the League and from the Seventh World Congress of the Comintern which assembled in Moscow a few months later (July-August, 1935). This congress had accepted instructions to mask the activities of the Comintern, to discard the word "war" from the program in favor of the word "peace," to inscribe the devices "Fight for Peace" and the "United Front" on the Communist banner as the watchwords of the Comintern. The word "Socialism" was also adopted for use in public henceforth in preference to the words "Communism" and "Bolshevism."

The Congress passed a resolution that the chief immediate task of the Comintern was to agitate for a "United Popular Front" in all countries. It was explained that this "new tactical orientation" merely meant new methods of fighting; that agitation for "the mass struggle against war must now be linked with reliance on state help from the Soviet Union and its mighty red army:" that operations in the different countries would henceforth be directed through the Communists of those countries; that leaders outside the Soviet Union who did not carry out the new tactics would be removed; and that if war broke out anywhere the device "fight for peace" would be the most effective weapon for "turning war into civil war against the bourgeoisie," the object for which the Comintern sections must strive. Stalin and eighteen others were "elected" to compose the Presidium of the Executive Committee of the Comintern and Dimitroff confirmed, as its Secretary-General.

Aimed at Democracies

This insidious plan was now put into universal practice by the non-Russian leaders sent home with instructions from Moscow. Though "Fascism" was held up as the arch-enemy, the chief subversive activity was prescribed for the "democratic" countries, hope being given up for the time being in Germany, Japan and Italy. France, Spain and Austria were expected to yield the best early fruit. Paris had already been made the European center of the Comintern, the capital from which appeals, manifestos, and other revolutionary matter could be launched without ostensibly compromising Moscow. A "united front" had already been formally established in France. Now, with Paris as its Point d'Appui, the Comintern engineered the outbreak of civil war in Spain.

No secret was made of this achievement in Russia. Spaniards were brought to Moscow in great numbers, trained in the art of civil war, then sent back as leaders to put their training into practice with the aid of non-Communist "Socialists" under the banner of the "United Popular Front." One batch of more than thirty left Moscow in March, 1936, after, a stay of about a year, and their intentions to carry out the program of the Comintern were described in *Trud* of March 30. Further efforts and success in Spain were recorded at length in the Comintern's official journal Nos. 4 and 7 of 1936 as the work of the Comintern, special credit being given to Dimitroff and the Paris center. Other matter published in Moscow claims that active assistance to the "United Popular Front" and the civil war was rendered constantly throughout 1936 and 1937, including the supply of Soviet tanks and airplanes, and that (without reckoning armaments) Soviet exports to Spain in 1937 were tenfold more than in 1936.

France is regarded in Moscow as the most friendly nation. This friendship makes her the more vulnerable; the closer the friendship the better the opportunity for disintegrative attack. The "new orientation" of the Comintern is devised for attacking friends and partners while marching together ostensibly in unity against Fascism, the common enemy. The "Front Populaire" has until recently been regarded as the most promising sphere of action, though it has not yet produced open civil war. The central committee of the Comintern in Moscow claims that thanks to the "Front Populaire," the Socialist movement in France is rapidly becoming a Communist movement controlled and guided by the French section of the Comintern. To emphasize this they point out that this section in France had only 87,000 members in 1936, but by the end of 1937 the number had risen to over 340,000—fourfold increase in one year—and that during this period France has been kept in a constant state of turmoil on the verge of violence and street fighting. The Communist Party of Poland is described as "one of the best sections of the Comintern, though obliged to work deep underground." From avaliable materials it appears, however, that Moscow considers the present moment inopportune for turning Poland into "another Spain" as this would give Germany and the Soviet Union a common frontier, and risk a major war with Russia as a principal.

All the countries of Europe are treated individually, with the same prescription: The "united front," strikes and disorders; civil war; Soviet government. None of these stages can be skipped. Stalin himself has made the most authoritative pronouncement on this point, which is reaffirmed in all the latest relevant resolutions of the "staff of world revolution" in Moscow. This declares there can be no real revolution without civil war, as the only road to Soviet rule is the road of violence.

Program Variations

There is more variation in the program and methods applied to countries outside Europe. The Arabs are being urged by Comintern agitators toward the formation of a "Pan-Arabian Front" to fight for a "united Arabistan" and the abolition of "artificial frontiers" by means of which Britain and France have "torn the country into bits." The Comintern reports explain unambiguously that the end here as in Europe is to cause and maintain disorders, thereby undermining existing authority. The Comintern section in India, when trying to establish a united front with the Congress Party, "made the mistake" of laying immediate stress on the struggle for a "Soviet regime" in India. The leaders were reproved in Moscow and have now "altered their tactics" to conform with the general program of the revolutionary staff in Moscow. For the present stage they are trying to work with the Congress Party for national emancipation from British rule and hiding their Soviet aims until a stronger hold on the "united front" be established. In China the united front has been firmly laid, it is claimed ostensibly, to combat Japanese aggression. Comintern spokesmen declare that the war in China is pouring water on their mill, that

(Continued on page 375)

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*From *San Francisco Examiner*.

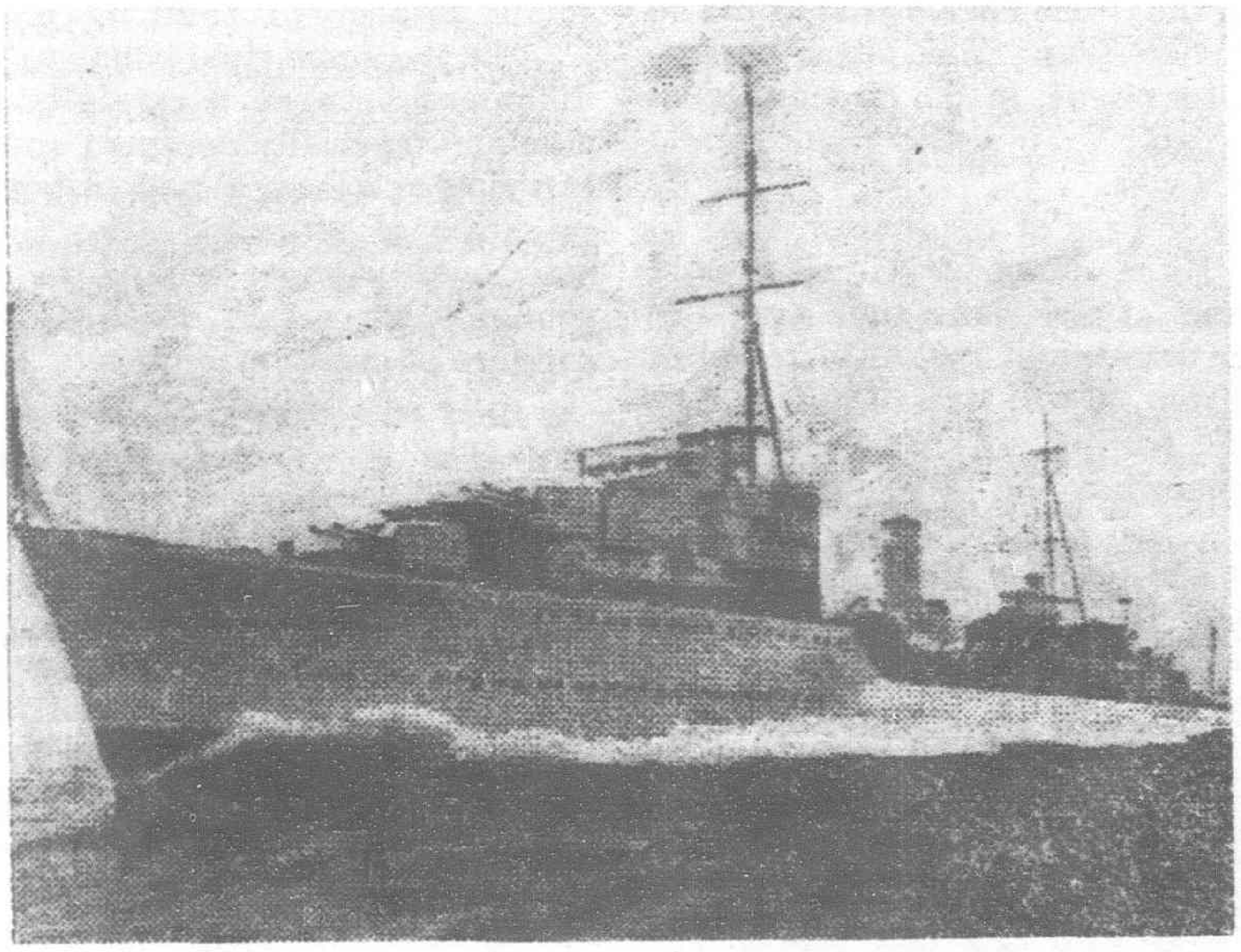
Canada and War on the Pacific

Editor's Note :—The following is an excerpt from " Canada, the Pacific and War" by William Strange of Canada, published in Toronto under the auspices of the Canadian Institute of International Affairs as book one of a series dealing with international problems that affect Canada. The book is an unbiased study, surveying the general situation and although many may differ from the views of the author who concludes the possibility of war more than that of peace, it is worthwhile careful reading. President J. W. Dafoe of the Canadian Institute of International Affairs, in his preface says that the book " is an introductory survey written for the intelligent Canadian who is interested in, and perturbed about what is happening on the other side of the Pacific, and who wants material which will help him better to understand the dispatches which he reads in the daily newspapers." The remark well covers the object of the book from the chapters of which the following is taken. Interest in the subject on which Mr. Strange writes has been enhanced since President Roosevelt's speech at Kingston, Ontario, in mid-August, in which he said America would defend Canada if Canada were attacked.

* * *

IT is often claimed for Canada, with more than a little justification, that this country is less likely to precipitate a war than almost any other in the world. It would not be easy to dispute the truth of such a claim, yet the basis of fact upon which it rests is not one which necessarily ensures indefinite peace even for Canada. There are, in fact, two distinct channels through which the Canadian Ship of State may, at some future time, sail into battle. One leads to Europe, the other to the Pacific.

That Canada could expect to remain entirely aloof from a general European war seems unlikely in view of this country's membership in the British Empire and the strong British sentiment which exists in the hearts of many Canadians. A trans-Pacific war involving the United States would be even more likely to produce entanglements ; for, added to sentiment, which would surely be predominantly pro-American, and economic ties, there would be the matter of geographical proximity, with its attendant problems of a strategic nature. These problems will be touched upon more fully further on. For the time being their existence will have to be taken for granted.



H.M.S. *Afridi*, first of the 16 new "tribal" class destroyers, the largest ever built for the British Navy

To state the matter in a nutshell, where the pull to Europe would be dependent solely upon the British connection, the pull to the Pacific would be American, or British, or even (and most likely) both. The avoidance of participation in a European war is something that might conceivably be accomplished by popular vote, something over which Canadians themselves would have control. A Pacific war, on the other hand, might bring forth international difficulties with Canada's great southern neighbor, might produce actual attack upon Canada's Pacific shores : it is thus something nearer home so to speak, and something over which, provided it were on a large enough scale, Canadian votes would have no control whatever.

Some Possibilities

We shall deal, for the next few pages, with possibilities that may appear at present to be remote. Nevertheless, they are possibilities. They constitute, as we shall see, what may, as the great international struggle continues, be the most serious problem before Canadians in the future. No matter how remote they may seem at the present time, they are at least a source of real danger to this country. It would be a foolhardy man who, having even slight knowledge of the twists and turns of the history of this world, would deny that such possibilities may become, with the swift passage of time, uncomfortably near to actualities.

Probably no subject is more frequently debated amongst thoughtful Canadians to-day than that of what should be this country's attitude toward war. Canada is an autonomous State, but she is not free from sentimental or economic ties. In time of war it might quickly become clear that Canadian freedom of action is limited quite sharply by these factors. It is, for example, a common enough thing for Canadian foreign policy to be discussed, and openly, without that sentimental pro-British bias which is largely a relic of the days when Canada was a colony. Yet that old colonial feeling, which demands that Canada stand or fall with the Mother Country, is far from dead ; and there are, further, a number of Canadian imperialists whose imperialism is not colonial in outlook, but is founded on the conviction that it is to Canada's interest to co-operate with Great Britain to the full. There are still others who favor some sort of Canadian-British alliance. That these convictions and sentiments would be strengthened by any serious threat to the Empire's existence, either in Europe or in the Far East, is more than likely.

These opinions and feelings are not shared by all Canadians. Many others lean toward a North American attitude, one which would have the country linked more closely to the United States in an attempt to isolate the North American continent from the threatening storms on either hand. Again, great numbers have either given the matter little thought, or, unwilling to cross their bridges before they come to them, have postponed decision pending the final necessity for taking it. These facts, perhaps, account in part for the unwillingness of successive Canadian governments to accept commitments. They, too, are waiting to see which way the cat will jump.

Public Feeling Varies

Nothing, indeed, is more difficult to assess than the probable attitude of the Canadian people toward a major war. Briefly, and tentatively, it might be said that French-Canada would look askance at any attempt to use her man-power in an overseas conflict, that the people of the Maritime Provinces would serve the Empire without question, that Empire sentiment is strong in Ontario, and that the Prairie Provinces are the most likely to adopt an attitude of aloofness. These, perhaps, are the main lines of cleavage, but the whole pattern of Canadian thought on the subject is immensely complicated. Moreover, it is in a state of flux. It is unanimous, however, in agreeing that an attack on the shores of this country would have to be resisted tooth and nail. This is why the possibility of war in the Pacific is one that matters, and one that demands attention.

In the present conditions of the world, it seems that a potential invader from across the Pacific might be Japan. Yet the danger to Canada's Pacific shore-line is only apparent in terms of an American-Japanese war, or one between Great Britain and Japan, in which the Japanese fleet would be free to repel attacks upon Japan and to deliver others—if circumstances made it advisable—on the Canadian coast. This could be Canada's war in the Pacific, and it could be brought about without Canadians being willing to take part. To assume this is, of course, to assume the worst. But it is not to assume the impossible.

A war between Great Britain and Japan would be serious enough, but a war between the United States and Japan, whether Great Britain were a participant or not, would be a matter of immediate and grave concern to Canada. It seems inconceivable that Canadian sympathy would not, whatever the immediate cause of conflct, very quickly favor the United States. Racial antipathies in the province of British Columbia would carry much weight. Fear, no matter how unfounded in actual fact, of some large-scale Japanese invasion of the North American continent might carry almost as much. That Great Britain would be associated with the United States is more than likely, for, as we have seen, the chances of the United States embarking on such a war without first reaching an understanding with the British are slight.

The first question that would arise, and it would arise at once, would be the maintenance of Canadian neutrality. And the question would split itself into two parts. Does Canada wish to remain neutral? Can Canada remain neutral even if she wishes to? American air-bases might, easily enough, be the real base of operations. The most conveniently located would be in Alaska, and they could be most conventiently reached by violation of Canadian neutrality. The flying of American airplanes over Canadian territory would, in itself, constitute a violation of neutrality. There would be forced landings, the need for refueling, more than a handful of almost routine "incidents" on which the diplomats would have to expend some stressful thought.

Maintaining Neutrality

If Great Britain were not engaged in the war and the matter of maintaining Canadian neutrality were shown to be one of serious concern to her and to the Empire as a whole, no doubt the United States would respect that neutrality unless too hard pressed to do so with safety. But, failing this, would it, or could it be maintained? The truth seems to be that Canada in the Great Pacific War would be as Belgium was in the Great European War. The latter became Belgium's war. Canadian sympathies might, in the circumstances suggested above, be with the "violator"; but the result would be the same. It would be Canada's war.

Let us now, in order to clarify our view of the matter, turn to the strategic side of the question. By so doing we will shed more light on the neutrality question, and at the same time arrive at some idea of what a general Pacific war might mean, in terms of actual defense, to Canada. In addition, it will stress the fact that Canada's geographical position while tending to keep the country clear of European troubles, has somewhat the opposite effect in Pacific affairs.

"The most striking fact about the basin of the North Pacific is that it tends to be semi-circular. On the west a long line of Japanese islands curves along the Asiatic mainland for two thousand miles, inclining toward the north-east. The North American Continent forms the other half of the semi-circle, the two halves almost meeting at the extremities of the Kurile (Japanese) and Aleutian (American) islands. Of the North American arch the British Columbian coast, inserted between two long stretches of American territory, forms the keystone." This last, from both the American and Canadian points of view, is an extremely important fact.

"The American mainland, strategically, is continued south-westerly two thousand miles out into the Pacific by the American possession of Hawaii. The Japanese sphere, in similar manner, extends into the Pacific, and the two extremities are not far apart. Thus, the North Pacific, for these two Powers, becomes almost a circle." But the near-circle is interrupted by the British Columbian coast.

There seems to be general agreement that the American advanced base at Hawaii would be likely to prevent any hostile battle fleet from conducting operations against the American mainland; and similarly the Japanese are in a position to protect themselves, and if necessary the Chinese coast as well, by means of naval bases on the outer and inner strings of their Pacific islands.

The Wide Pacific

A further important factor in the naval connection is the width of the Pacific. Battle fleets cannot operate to any real effect so far from their bases as trans-Pacific attack must necessitate. It would actually be extremely difficult—some authorities state definitely impossible—for Japan and the United States to engage in a life and death struggle. The naval aspect of a Japanese-American war would, almost inevitably, resolve itself into hit-and-run raids, single ship duels (when single ships could find each other), commerce destruction, submarine attacks, limited operations against the southern Pacific bases of each power, and air raids carried out from aircraft-carriers, from the Kuriles and the Aleutians, or Alaska. Such operations may create what the military technicians describe as "alarm and despondency," but they cannot be regarded as war to the death between nations. Modern armored cruisers, especially built for raiding purposes, can, it is true, travel some 15,000 miles without refueling; but they cannot maintain high speed and long range simultaneously. A range of 15,000 miles when submitted to the enormously increased fuel consumption consequent on the maintenance of continuous full speed drops, almost incredibly, to somewhere in the region of 2,800 miles.

Even making the fullest allowance for the above-mentioned "alarm and despondency," it is obvious that not even a completely successful raid of the type envisaged on such a port as San Francisco or Vancouver would do very much to shake the national solidity of either the United States or Canada. Their most likely effect, indeed, would be the raising of the national temper to a high pitch. The stimulus provided to recruiting in Great Britain must have been a serious embarrassment to Germans fighting on the Western front. The hypothetical case mentioned above provides a fairly direct parallel.

In the air the story might be different. It is, at any rate, the story of greatest interest to Canadians. Recent spectacular long-distance flights have shaken faith in Canada's geographical isolation from the more turbulent sections of the world. It is, no doubt, desirable that complacency should be given a jolt from time to time. The Russian flights across the "roof of the world," and the recent trans-Atlantic trips, may do something to arouse an interest in international affairs which has hitherto been confined to a quite small number of thinking Canadians.

At the same time it has to be remembered that there is a vast difference between a carefully prepared long-distance flight by a machine especially designed and equipped for the purpose, and the carrying of a heavy load of bombs for the same distance with the intention of returning after they have been dropped. Raids by emotional patriots willing to undertake a one-way flight, with probable or certain death at the other end, would involve the sacrifice of costly machines.

Long Distance Flight

There are the further points that the type of extremely long-distance bombing raids envisaged by some writers whose opinions are perhaps colored by a disapproval of an isolationist policy or a strictly North American policy for Canada, are no more likely to damage the country materially than are the hit-and-run raids by sea already referred to; and that long-range bombers—even when they are developed to a point where such flights are possible, which is unlikely to happen for some time to come—would be of necessity unescorted by fighting machines, and thus decidedly vulnerable to the defensive operations of fast and maneuverable "interceptor" machines dispatched against them by the country of their destination. At the worst, it would be more "alarm and despondency"; more probably such expeditions will be doomed to failure for some considerable time to come. Nevertheless, it has to be admitted that grounds for indefinite complacency are departing. For future generations the problem may be acute.

It is because of the rapidly increasing importance of the air arm that the British Columbia coast-line, separating the United States from Alaska and the Aleutians, is more and more definitely becoming regarded as a source of probable embarrassment in case of a trans-Pacific war involving the United States; for those northern-most United States territories would be the logical areas in which offensive air-bases would be established.

"The Aleutian Islands lie close to a great circle course from Vancouver or Seattle to Yokohama. They extend in a south-westerly direction from the south-western tip of the Alaskan mainland for about one thousand miles. The main harbor in the Aleutians is Dutch Harbor on Unalaska Island. From Dutch Harbor to Shimushu, the northernmost island of the Kurile group, is about 1,200 miles. From Attu, the westermost Aleutian to Shimushu is about 700 miles."

The above statement brings us within striking distance of the practical possibilities of the nearer future. The range of the largest bombing airplanes being built to-day is in region of 750 miles. The question of battle fleet actions having been eliminated by the width of the Pacific, it becomes clear that the obvious strategical moves in a Japanese-American war lie in the advancing by the belligerents of their respective bases along existing lines of communication: for Japan north along the Kurile chain, for the United States westward along the Aleutians. At the point the air arm takes upon itself a new significance, although weather conditions in this region are described as difficult. The air arm, when north Pacific air-bases for the United States come into the picture, reaches out and touches Canadian neutrality.

Canada's Position

Dutch Harbor is roughly 1,700 miles north of Vancouver. Prince Rupert to Dutch Harbor is about 1,200 miles in the direction west-by-south, and some 500 miles from Seattle by air. No doubt the sea-route to the Aleutians from the United States could be kept open without very much difficulty; but it would be highly advantageous to the Americans if they were able to fly their warplanes in short hops up the Canadian Pacific Coast. It is not inconceivable at all that this coast might become the most important communication line in the particular possible war under discussion.

This fact, added to the matter of popular sentiment previously touched upon, would make it almost a certainty that Canada would not attempt to maintain neutrality in such a war. Automatically, then, she would become a belligerent, for there is no half-way state between neutrality and belligerency.

We have had to make some bold assumptions in order to bring to bear such guns as Canada possesses. It has taken more than a little speculation to bring us to the battle. Since we are there, however, and since we are dealing with circumstances which are at any rate possible, it may be as well to consider what would have to be done. What, in such circumstancs, could Canada contribute? On whom could she rely for defense of that entangling strip of coast?

A Canadian trans-Pacific expeditionary force is out of the question. Canadian naval raids on Japanese coasts are not possible because there is no Canadian warship capable of conducting such an operation. Canadian offensive action in the air would have to be supplementary to that of the United States, and might be late in arrival, for the bombers would presumably have to be built for the purpose. Canada's part appears, in reality, to be limited to co-operation in the maintenance of communications with the American north-Pacific bases, supply of war materials (if such supply were needed) and the defense of her own coasts against the sporadic form of naval and air attack already mentioned. That is Canada's war in the Pacific, regarded from a more or less technical point of view.

For defense of her coasts Canada could not, in all probability, rely upon that sometimes over-rated bulwark, the British navy. If Canada were to secede from the Empire, the British navy would not be reduced in size by one single ship. It is not designed for the defense of Canadian coasts, although its great effectiveness, no doubt, provides a defense for the whole Empire in the broader sense that it is a warning to potential aggressors and thus an indirect form of insurance.

In passing, it should be realized that the British navy has but one important Pacific base—Singapore. A strong fleet and appropriate air forces based on that port could prevent any movement of hostile surface craft west of Singapore: but it is extremely doubtful that Singapore could serve as a base from which to attack Japan successfully. It is doubtful even whether ships from this base could be regarded as any real protection for Hongkong, a view which is given some point by the fact that this British colony is now being fortified. This is especially true when one considers that a strong British Far Eastern fleet could hardly be maintained in the event of a general war, or of continued threats of explosion in Europe.

Defense Problem Not Hard

The defense of the Canadian Pacific Coast, then, does not present any very serious difficulties. Practically speaking, it is neither expensive nor difficult: politically speaking, it is likely to be a problem which will not have to be met for many years to come.

All this, however, does not mean that Canadians can afford to look upon war in the Pacific with complacency. Defense of coasts, of territory, is no defense against the real destruction wrought by modern warfare—the destruction of trade and of life, the hopeless dislocation of the economic system on which the lives and well-being of all depend. This is a fact which was amply proved during, and after, the Great War, which came near to ruining the so-called victors as well as the vanquished, even though some of the former not only defended their territory but actually increased it. The real defense against the chaos brought about by war is the maintenance of peace. It is, in the final analysis, the only defense we have.

The truth is that war, even a "police" war is no solution for economic problems such as those confronting the Japan of to-day. On the contrary, it would be likely to aggravate them, as well as to introduce others which do not now exist.

This is not to say that collective action designed to restrain aggressive nations is valueless, and certainly not to say that it is unnecessary. On the contrary, it is easy to envisage circumstances in which it may be quite unavoidable. But it is a short-term expedient if the danger of war is to be eliminated, or effectively reduced, unless it is accompanied by economic readjustments.

What are needed, more than anything else, are understanding of the underlying problems, clear heads, and a willingness to make sacrifices, if necessary, in order to maintain peace. The Western peoples can make no greater mistake than to regard the Chinese and Japanese as barbarous and unreasonable peoples. They are far from it. In many respects, they have as much to contribute to the general well-being as any other peoples in the world. We may do well to remember that the greatest Chinese painter of all time lived some nine hundred years before the birth of Christ, and well over two thousand years before the birth of the great Leonardo da Vinci. Art is not meaningless. It is evidence of civilization.

Oriental Culture

The Ming dynasty, famed for its production of works of art, saw also the building of city walls, paved roads, bridges, palaces and temples many of which still survive in all their beauty. Japanese sculpture, dating beyond A.D. 552, was well advanced at the time that Richard Coeur de Lion led his rough warriors to the Holy Land.

That Western peoples, from the heights of a more grasping and far more recent civilization, feel entitled to look down upon their oriental brothers and to disregard their needs is deplorable. What is now happening in the Far East is tragic, certainly. It is also barbarous as meticulous imitation of Western methods of warfare can make it. But who, knowing something of the facts, something of the long story behind it all, feels able to condemn either side out of hand?

The Far Eastern problem is no superficial matter, and neither is it a distinctively Far Eastern problem. It is a matter which is the concern of all, and unless the basic cause of conflict is dealt with by the application of at least some rough principles of economic justice, the conflict will continue in one form or another. The peace, and the very civilization of West, as well as East, are at stake.

Hangchow Mills Remain Intact

Inspection of 12 Chinese-owned factories in Hangchow revealed that the machinery in five of these factories remained intact despite the hostilities of last year. The five factories were the Kwang Hwa Match Factory, the San Yue Cotton Goods Weaving Factory, the Ching Cheng Silk Filature, the Hwa Foong Paper Mill and the Tien Cheng Silk Weaving Mill.

The property of the seven other factories were either partially damaged or totally destroyed in the fighting. The Hangchow power station, although damaged, was later repaired and again put into operation. The Ching Chen Silk Filature also resumed operations under Sino-Japanese management. The Kwang Hwa Match Factory decided to reopen on September 1.

As to the other factories, two, the San Yue Cotton Goods Weaving Factory and the Tien Cheng Silk Weaving Factory, are expected to reopen, but there is little hope for the reopening of others, such as the Ming Sen Medicine Factory, the Ta Yeh and Ta Lai Iron Works, and the Jen Ho Glass Factory. Difficulties encountered include extensive damages suffered by the properties, the difficulty in obtaining raw materials, and a lack of funds to finance their business.

Manchoukuo's Rapid Development*

By *JOHANN NEWEL, of the Hamburger Tageblatt*

The blowing up and demolition of a stretch of the railway line near Mukden on September 18, 1931, gave the Japanese occasion for military intervention. Not more than 5½ months later, on March 1, 1932, the new state was proclaimed. From that date begins the extraordinarily rapid progressive development of this country, a development which periodically assumed breathless speed, slowed down from the middle of 1934, and then passed over to a systematic economic regulation. For better or for worse, Manchoukuo is to-day inseparably chained to Japan in one close economic block. In the following an attempt will be made to review the development of the state during the six years of its existence.

Under the former government it was, owing to the absence of all the necessary institutions, absolutely impossible to obtain accurate details regarding the population of Manchuria. In 1931 the number of inhabitants was generally estimated at roughly 30 millions. Only after establishing a rigid central government, with an administration apparatus reaching into the most remote territories, was it possible to carry out a kind of a census. The census of 1937, carried out for the first time and very thoroughly, revealed roughly 35 million inhabitants, a much higher number than had commonly been computed. These 35 millions are distributed in extremely varying density over roughly 1.3 million sq. kilometers. It is obvious that Manchuria is still not exactly what might be called densely populated and that there is still plenty of space for more settlers. Whereas, however, during the last decades, chiefly Chinese emigrants have settled here, the land still at disposal is from now onwards—if not exclusively—at least to a considerable extent to be reserved for the Japanese ; in the course of the next 20 years it is intended to settle in Manchuria no less than five million families with roughly 20 million people. This does not mean, however, that in future the Chinese will be excluded ; on the contrary, every Chinese, Korean, Mongolian or Russian who really and seriously wishes to settle and work here, will always be highly welcome. Like all new settlements, Manchuria is a country of men, whereas the women are considerably in the minority. Up country the difference between the number of women and men is not so great and always diminishes in a few years, but in the towns and industrial centers there are almost 186 men to 100 women.

The state of Manchoukuo is a constitutional monarchy, with an Emperor at the head, a Crown Council, and a State Council. For the purpose of a more rigid administration and in order to abolish the petty independencies and bungling methods of the provinces hitherto prevailing under the former regime, the original four provinces Fengtien (Mukden), Kirin, Heilungkiang (Tsitsihar), and Jehol were re-divided towards the end of 1934 into 14 provinces, of which latter those four provinces inhabited mainly by Mongolians, i.e. East, West, North and South Hsingan, received a special, separate administration. As the first foreign power Japan recognized the new state already on September 15, 1932. Then followed on March 3, 1934 San Salvador, April 18 of the same year the Holy See, and since the beginning of this year in quick succession Italy, National Spain and Germany. Soviet Russia has not yet recognized Manchoukuo de jure, but it has done so de facto by selling in March 1935 the former East China Railway to Manchoukuo. All other powers have hitherto taken up a waiting attitude. For a while they still tried to maintain exterritorial rights, but they had to give way step by step, and after Japan has renounced all her exterritorial rights since the end of 1937 England, America, etc., have resigned themselves to their fate.

Agricultural Produce

Of the approximately 1.3 million sq. km. area of the country only 32.7 million hectares (approximately 80.7 million acres) are cultivable. Of this latter figure about 15 million hectares (approximately 37 million acres) have so far actually been cultivated, and they yield on an average annually 16.6 million tons. At the head of the crop stands the famous Soya Bean with 4.1 million tons, i.e. almost exactly one quarter of the total annual crop. A close second is Kaoliang, also called Sorghum or Negro Millet, with roughly four million tons. Then come Millet with 3.1 million tons and Maize 3.1 million tons. Wheat, which thrives well particularly in North Manchuria, fills the fifth place with a little more than one million tons. In order, however, to dam the import of Wheat Flour and to save foreign money, the government is now making strenuous effort to increase the cultivation of Wheat as much as possible. The cultivation of Rice is also being energetically promoted, with the result that the crop of Paddy Rice rose from 110,000 tons in 1932 to 520,000 tons in 1937.

The crop of Perilla (an aromatic seed, the tiny kernels of which yield an excellent oil for the manufacture of various kinds of lac) has also been greatly advanced, even if this was partly only temporarily. In 1934, the first year in which Perilla was specially quoted in statistics, the crop amounted to 63,000 tons, in 1935 181,000 tons, in 1936 147,000 tons, in 1937 only 123,000 tons. Besides Japan the United States of North America were for a long time the principal buyers of this oil, until its competition with the American Linseed Oil became so great that the government levied a high special duty on Manchurian Perilla Oil. Until 1936 Perilla was practically unknown in Germany, then a brisk business was done in this commodity, and in the whole year 1937 Germany imported no less than 4,200 tons of oil to the value of 1.2 million Reichsmark.

Whilst kaoliang, millet, rice and maize are mainly consumed in the home country, a large proportion of the soya bean crop is exported and forms—together with the bean cake and bean oil gained from the soya beans—the economic backbone of the country. Since 1930 the price of the soya bean has undergone great fluctuations. From a record price in the year just mentioned of 8.46 Silver Yens in Dalny per picul (60.48 kg.) it sank in 1931 to 5.96, 1932 to 5.22, and reached in November 1933 its lowest level of 3.73. From that point it rose again until in May 1938 it once more exceeded eight yens, but immediately afterwards there was another fall. It must, however, be taken into consideration that the high prices of the first half of 1938 were chiefly the outcome of speculation and generally not inconsiderably above the London market prices. At present the government is working at a plan to put an end to this unhealthy state of affairs. It is not yet certain which form this plan will take, but presumably a price control is the least that the government will introduce.

A section of Manchurian agriculture which is becoming of ever increasing importance is Cotton, which is of extreme significance for the economy of the home country as well as for Japan. Also for this produce the government has dropped the former free economy and gone over to a plan economy, but it is encountering very considerable climatic difficulties. It is true that extensive tracts of South Manchuria are excellently suited for the cultivation of a certain kind of Cotton imported from China and improved in Manchuria during the last few years, but the inconstant weather from spring to autumn frequently upsets all the calculations of the farmers regarding the most favorable time of sowing, and has occasionally led to very bad harvests.

Cattle Farming and Forestry

According to a careful estimate the live stock of Manchuria amounted in 1936 to approximately 1.8 million horses, 0.6 million mules, 0.6 million asses, 1.3 million cattle, 2.2 million sheep and goats, and 6.1 million pigs. Since the erection of the new state cattle breeding is being particularly promoted. The farmers usually keep only so much cattle as they require for their own purposes. Cattle breeding exclusively is done only in the Mongolian parts of the country, consisting principally of horses, sheep and horned cattle. In recent times sheep breeding is gaining importance, and the measures of the government—providing animals for breeding, etc.—have already produced success worthy of notice. The aim is

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*From the *Manchuria Daily News Magazine.*

a stock of 15 million sheep, which would make Manchuria as well as Japan independent of the other countries producing wool, but probably many years will elapse before this object is reached. Meanwhile the government has put the wool trade under control by placing it in the hands of five firms joined together in a union. The government has similar steps in view with a number of other export articles, particularly bristles, hides and skins, and such like.

Manchuria has considerable forests. In 1936 they were estimated at 350,000 sq. km., i.e. more than one quarter of the total area of the country. In order to prevent a continuation of the inexcusable felling of timber of former years, the government has passed a Forest Bill and classified the forests under three categories: state, public, and private forests. But the enormous increase of the Japanese demand for cellulose has frustrated all good intentions, and although the unwarranted felling of previous years is a thing of the past, yet timber is still being lavishly squandered away, especially in the remote corners of the land. It is to be hoped that the government will soon put a stop to this and take such rigorous steps as to prevent a further abuse of one of the most important natural treasures of the country.

Industry

The fundament of Manchoukuo's industry lies mainly in the turning to good account respectively in the improvement of the country's natural treasures and agricultural produce. Since the erection of the state it has developed exceedingly rapidly, but it is impossible to make a survey anything like accurate. The statistics of the country are still of a very tender age and far from being able to keep step with the times or to embrace all things really of interest. Experimental lists compiled hitherto have rather the character of estimates, are full of errors, and therefore quite unreliable. This is partly due to the fact that all the foundation for such statistics has so far been wanting and that all the necessary work has to be gone through right from the very beginning. Nevertheless an attempt shall be made to describe briefly the most important industrial branches.

In the first place it will be necessary to say a word or two about the industrial policy of the government. At the beginning, during the first years, the government's aim was to prevent over-industrializing and over-capitalizing, and to safeguard the industries of vital importance. This policy, consequently followed, bore its first fruit of success when the government—as soon as the Sino-Japanese complications had commenced, and aware of the danger threatening from Russia—proceeded to a strict economy of defence and had to alter the whole economic life of the nation from the standpoint of defending the country.

To-day almost the entire industry has been re-modelled and focussed on to this chief object; the more important sections of industry lie in the hands of so-called "Special Enterprises" with monopoly-like rights. At the moment there are about 40 such enterprises with a total capital of almost 1,500 million Yuan, of which approximately 1,000 million are paid in. The greatest of them are the following: the so-called Ayukawa concern (Manchurian Heavy-Industries Co.) with a capital of Y.450 million of which 400 million are already paid in. United in this concern are a number of the most important industries, such as the Showa Steel Works, capital 100 million Yuan, erected to a great extent with the aid of German industrial works; the Penshihu Iron Works, capital ten million; the Manchurian Colliery Co., capital 80 million; the Manchurian Gold-Mine Co., capital 12 million; the Manchurian Light Metal Co., capital 25 million; the Manchurian Air Transport & Aeroplane Building Co.; the Mukden Arsenal; the Dowa Automobile Works, and a string of other enterprises. Number two is the Manchurian Electricity Corporation, with a capital of 160 million, of which 107 million are paid in, followed by the Telephone & Telegraph Co., which also has the wireless service and a capital of 50 million Yuan, of which 36 million are paid in. Other important enterprises are the Chemical Industry Co., capital 25 million fully paid in; the Coal Liquefying Co., capital 25 million, in course of erection; the Manchurian Petroleum Co., capital ten million Yuan fully paid in, and several other larger and smaller companies. All, however, are being controlled and led by the State from the one vital standpoint of defending the country.

Red Wolf in Sheep's Clothing

(Continued from page 370)

whatever be the fortunes of war, the Comintern is gaining strength in the Far East and is sure of ultimate victory, with civil war in Japan as well as in China. They admit there are great difficulties in working within Japan itself, but they are rallying elements of discontent and are willing to make a united front with any existing or potential organization, no matter what its hue, if only it may serve to attract the masses and undermine order. The most striking example of the Comintern's flexibility in this matter was given last May, when Moscow published an appeal to the Roman Catholic Church to join with the Comintern and make a united front to fight for religious liberty in Germany, promising in the name of Stalin himself that a Soviet regime would guarantee every Catholic the right to "breathe freely and fight freely for his convictions."

Wireless Freely Used

The wireless stations of the Soviet Union belong to the State, and they are placed at the disposal of the Comintern. The long-wave stations "Moscow I" and "Moscow II" give 48 hours a week to propaganda transmission for the Comintern in foreign languages—six English, seven French, nine Spanish, nine German, seven Italian, three Czech, four Hungarian, one Dutch, one Swedish one Bulgarian. Many short-wave stations are also giving similar regular transmission from Moscow in foreign languages daily, as well as stations in Minsk and elsewhere.

The discipline prescribed by the World Congress in 1935 (whose report has been published at length in many tongues) has been strictly enforced. All the sections abroad have been purged of lukewarm leaders and "extremists" unwilling or unable to join in establishing and maintaining the various United Fronts. Numerous leaders had in the past been obliged to flee from the arm of the law in their own countries and found refuge for many years in the Soviet Union. A large proportion of these, especially Communists from Germany, Poland, Finland, and the Baltic States, have not survived the recent tests, having been "quietly put out of the way." All the chief members of the central committees of the Estonian and Finnish sections—which have worked for many years from Leningrad instead of in their adjacent countries—are said on good authority to have been found wanting and shot. Yezhoff, chief of the G.P.U., is himself a member of the central committee of the Comintern. Many of his victims shot as spies and wreckers have really been sacrificed to Stalin's Comintern policy. They appear to include the generals of the Red Army and fleet shot last Summer.

Stalin Clears His Path

These men and a proportion of "civilian" Communists had turned their backs on the international tasks of the Bolshevist revolution and were striving to make the most of the "Russia" they had inherited or seized. When Stalin felt the U.S.S.R., as a "Communist Citadel" was made strong enough by the five-year-plan system, he reverted with fresh determination to the earlier Bolshevist mission of conducting the "world class-war" and found men like Marshal Tukhachevsky, Generals Kork, Yakir and Uborevich in his path. The warning given by the shooting of Zinovieff, Kameneff, Pyatakoff, and others was unheeded by the army leaders, and Stalin began his drastic purge of the Red Army, openly called in Moscow the "backbone of the Comintern." He has since been striving to imbue it with the old communist spirit. His "citadel" has thereby been weakened almost to the point of debility, but the risk had to be taken if he would cleanse it of elements alien to his world mission. The purge was extended to embrace a large variety of undesirables inside and outside the party at home and the sections of the party abroad, dubbed and damned with the convenient label of Trotskyist.

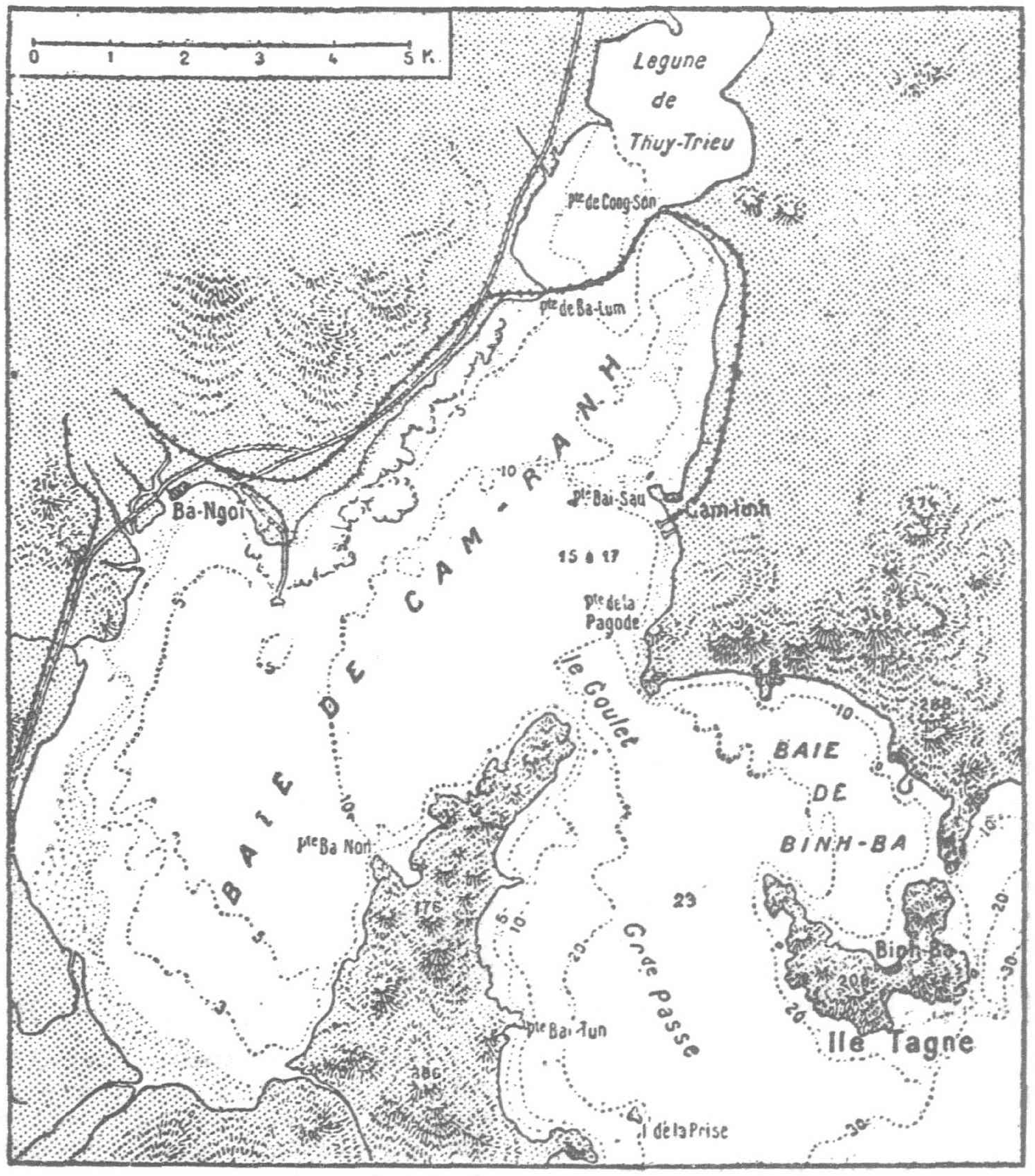
The Port of Cam Ranh in Indo-China*

By Captain REBEL

ALL the French people who are interested in maritime and colonial problems will hear with satisfaction that, out of the important expenditures destined to the national defense by the recent decretive law, an amount of 300 millions is expected to spend for the defense of Indo-China. Mr. Candace, reporter of the navy budget, has reclaimed to use a part of this amount for the development of the naval base of Cam Ranh on the east coast of Annam.

The recent events in the Far East, and the bombardment to the island of Hainan, a few miles distant from our Tonkin, give a serious actuality to this question.

Our excellent colony of Indo-China is, in reality, badly defended, for it has nowhere a naval base which is so solid, indispensable, well protected from storms and bombardments from sea, and capable of receiving big modern vessels and besides, of holding inside a fleet or troops of defense in the time of war. Now it is the time to establish a base of military operations in Cam Ranh, one of the best bays in the world. We should not miss this chance. And thus, we shall have soon and with the minimum expenditure a base of fleet, which has been reclaimed by all our navy for more than thirty years, and which will be most important and best situated in our colonial empire.



It is often said that the French are ignorant about the splendid resources of their oversea domains. Here is one of out of tens of thousands instances which justify this opinion.

According to the "International Nautical Instructions," which all the mariners carry with them on the water, the four best bays in the world are those of Sydney, Rio de Janeiro, Diego Suarez and Cam Ranh. Of these bays which are privileged and designed on the continents, by the capricious nature, it may be noted *en passant*, two belong to France. The first two are well known in the world, on account of the capitals in their neighborhood. The third one, Diego Suarez, in our big island of Madagascar, is less famous, for it is neither offered a chance of being on a much frequented route, nor afforded a rich town in the background.

Bay, Wide and Deep

While, as to the fourth, the bay of Cam Ranh, it is possibly said that all the French, except mariners, colonists in Indo-China, and some globetrotters, have never heard of it, even its name till to-day. Nevertheless, it is probably the most interesting of these four bays and is best favored by the nature. Wide and deep, and situated on one of the most frequented routes in the world, Cam Ranh Bay offers a providential refuge and a perfect safety to vessels on the sea, which is exposed to the strong north-east monsoon in Winter, and to disastrous typhoons in Summer.

If one draws on a map of Asia the route of vessels connecting Europe with the Far East, one will ascertain that it, between the straits of Malacca and the channel of Formosa and between the port of Singapore and that of Hongkong makes exactly a tangent to the coast of Indo-China and at the very point, on which Cam Ranh is!

It seems quite natural to think that France, taking advantage of this privileged situation, is pressed to establish there a naval base, a center of exportation or a port of call or revictualing at least for innumerable mail-liners and cargoboats frequently sailing everyday on the grand boulevard of the sea a few miles away from the bay. But it is not real yet, and besides, there is more strangeness!

Our readers know how our splendid colony of Indo-China, rich, populous, and fertile, is full of resources of all kinds on and under the ground, and how this colony offers the charms to voyagers and tourists.

Well, then, of all steamers of all the foreign lines connecting Europe with the Far East (there are eight lines exactly), none dares to stop even a few hours at this gracious place, either for some valuable merchandise or for passengers! And those vessels pass over six miles distant from Cam Ranh!

What is the cause of this incomprehensible abstention? Is it an inevitable ostracism? Never!

A Treasure House

The reason, may it be surely and inexorable, is that the French Indo-China, so full of various treasures, does not actually have any port capable to receive, despite of these favorable conditions, the modern deep-draught steamers of big displacement tonnage. Even the old vessels of smaller tonnage are no longer able to approach the bay, turning from their regular course at the sacrifice of expensive troubles to relax themselves in two ports remote from each other: Saigon on the Donai River, 78 miles up from the sea, and the less deep Haiphong in the gulf of Tonkin which is more eccentric and more remote.

It is now the time when "time is money" as never before and this motto is more applicable to vessels than to human beings. The expense of a big boat, modern leviathan, is so tremendous that the steamship companies are ought to face with the most unexpected situations which force them to shorten her route and reduce her running costs as much as possible. More or less by some ten miles of her route can be profitable or not for the companies.

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*Translated from *L'Illustration*.

The following two examples will illustrate the fact that an economy of some hours on sea is an enormous interest to a steamship company.

The port of Cherbourg, where nothing exists for the service of passengers, has been more frequently visited by big Atlantic liners than Havre which has more complete accommodations, because the former economizes their route by 60 miles. In 1900, 33 steamships touched there and disembarked 18,000 passengers. In 1927, ships increased to 836 which left 197,273 passengers ashore.

The new and rapid Italian liners from Genoa to the two Americas have given up their call to Marseille which is most attractive to them, in order to visit Cannes and Villa Franca and not to make an expensive detour, though not so long, by winding their route to north.

Now, tell foreign steamers for the Far East which are compelled to go roundabout 300 miles, that it is a loss of more than a day to sail up the meanders of the Donai River to Saigon or further to Haiphong!

Port Needed

What a pity to see such a sacrifice resulting from the lack of suitable port in our good colony with the accumulated richness in its warehouses and docks: rice, tea, manihot, India-rubber, coffee, precious wood, metals, and coal of Tonkin, etc.

Doesn't man want to see out of thousands examples showing the quality of those neglected treasures. In the gorgeous time, not so far from now, when the Manchu Emperors reigned over the Celestial Empire, the rice of our Indo-China was only one admitted to be served on the imperial table of the banquets which the august sovereigns, Sons of the Heaven, offered in their palace of jade to the mandarines of high rank, Tartar field-marshals, or viceroys, each of whom governed a province as big as France!

The delta of Tonkin and the plain of Cochin-china produce, it is possibly said, the best rice in the world. And the Annamese there harvest it twice a year.

The charms which the voyagers, explorers, or tourists fascinated by exotic beauty, can find in our beautiful Indo-China, are incomparable. Two of the "Wonders of the World" are found there together, the ruins of Angkor at Cambodia and the bay of Along at Tonkin.

Simultaneously with the establishment of the port of Cam Ranh, what profound changes will appear in the life of our Indo-China! Being actually outside the main current of the world, and being communicated only by two lines, namely, the Messageries Maritimes and the Chargeurs Reunis, the rich colony which is restrained of its flight, paralyzed of its expansion, and condemned to the only exchanges with its home country, will see the world to be presented before it, the tourists to gather from all over the world, and the vessels of all nationalities to flow into its great modern port, and it will be the rival of Hongkong and Singapore.

The bay of Cam Ranh is situated at the point equally distant from China, Japan, the Philippines, and the straits of Malacca. Therefore, it commands all over the South China Sea, and is a strategic position of the first grade.

The whole surface of the bay is 4,000 hectares, of which 1,700 hectares are at least 12 meters in depth, so it can receive the biggest modern vessels, either of war or of commerce, and even their successors, the draught of which will apparently never be deeper than the Suez Canal.

As the bay of Cam Ranh is surrounded by the hills from 50 to 400 meters high, it is an excellent refuge against the storms from all directions and the bombardments from the sea.

Easy to Guard

It can be reached through a narrow entrance of eight kilometers in width, which is similar to that of Brest, but with less currents and reefs in. This passage is formed by two promontories, which are easy to cover forts and batteries inside, and between which the small island of Tagne forms a very well sheltered outer harbor in the bay of Binh Ba. The width of the entrance varies from 300 meters at the offing to 1,200 meters at the mouth of the inlet, between the point of Doigt and that of Hon Lan. Consequently, in wartime, it will be easy to guard this port by means of a solid barrier, and the smallest battery of beton and some torpedo-tubes will be enough for making here completely inviolable.

The inlet is scooped out in the rock without giving any danger on a whole. Thus, it is a splendid natural port. It is so easily accessible, and the situation of the entrance is so simple and plain that no pilot is necessary. This condition will be appreciated by merchant ships which are always anxious to reduce their expenses.

Lastly, an invaluable advantage is the Hanoi-Saigon Railway which runs along the west shore of the lagoon and connects Cochin-china, Annam and Tonkin. The small station of Ba Ngoi stands and it has also a temporary wooden pier of modest size, at which some cargoboats lie at anchor. They are astonished at not finding any more better installation in this port, which, however, is destined by the nature to the greater prosperity.

In the north of the bay, there is the lagoon of Thuy Trien of 1,500 hectares which can be a good base of seaplanes, too.

Natural Harbor

In conclusion here are some remarks to add to the effect that a place for the future port is on the west coast between the point of the Pagoda and that of Phare. This place is 15 meters in depth of water and is 150 meters distant from the shore where a pier is to be built. Its materials will be supplied from the hills in front and the sand for filling up, from the sand-hill nearby. One will see how the work is simple and inexpensive, as the generous nature has all prepared for it. It is certainly an appreciable condition in this hard time when the budgets are heavily in debt.

Furthermore, the grandest sea route of Asia passes in front of the entrance of the port. In less than an hour, and parting from her regular itinerary, a vessel can come to throw her anchor or to rest at a quay of deep water to disembark her passengers, and immediately after several turns of her screw, she can join the grand boulevard on sea again. This detour will never take three hours altogether.

Being always deeply impressed by the advantages offered by Cam Ranh, our mariners have been calling the public attention to this splendid situation of the great bay of Indo-China. Paul Doumer who was most active among the so-called "Admirals," governors of Indo-China, was engaged in the French conquest of this colony and wanted to assure the public of this situation from a long time ago. He went on board of the *Kersaint*, a dispatch-boat, was struck by what he saw, and tried to set the first foundation of the great work mentioned above. The navy, encouraged by him, established a revictualing post for the torpedo-boats and gunboats of the naval station. But this modest attempt was postponed indefinitely. As always happening in similar cases, big interests concentrated in the other places were threatened by this unexpected rival and opposed strongly against the foundation of a new port. Saigon, capital of Indo-China, with the general government and the administrations in, Cholon, big market of rice, and Haiphong, gate of Tonkin defended very naturally their river ports. The navy and the army could gain nothing as a result.

In 1904, a sudden event brought the important rôle of the bay to light. This accident was in the time of the Russo-Japanese War. The fleet of Admiral Rodjevinsky arrived in Cam Ranh to take rest on its way to Vladivostok, 140 warships of the Russian fleet with their immense convoy entered the bay without any difficulty and any pilot, and stayed three days very comfortably. Some torpedo-boats on guard at the entrance of the bay assured the safety inside. Then, the Russian fleet, after finishing the revictualing and the recreation of combatants, departed to fight a battle off the coast of Tsushima.

Importance Recognized

The importance of Cam Ranh has been proved before the eyes of the whole world. The strenuous campaign was attempted in the circle of navy men and colonists. Though having been interrupted by the Great War, the campaign has come to regain a new force since the outbreak of the dramatic events which have actually been developed in the Far East where the unfathomable ambitions of Japan have suddenly made clear the urgent necessity of the defense of our Indo-Chinese empire.

The navy tried to establish a station of submarines in Cam Ranh. But it is an accomplished naval base that we need urgently to found here. The work to be done is very simple. With the amount of several billions being supplied by all the interested departments of navy, army, air, and colonies, it is possible to realize this magnificent work in two years.

As Admiral Lacaz, president of the Colonial Institute, said in his very interesting report on this problem, the establishment of the port of Cam Ranh is a "necessity of empire."

Labor Management at the Fushun Coal Mines*

The wonderful advancement made by Fushun within the past thirty years from an inconspicuous and desolate Manchu town lying to the east of Mukden, to one of the world's greatest coal mining metropolis must indeed be ranked among the remarkable feats which have been accomplished by mankind during the Twentieth Century. It is true that incessant demand for coal of the heavy industries in this ever developing mechanical age of the modern world helped to bring about such a marked transformation at Fushun where there are a number of coal fields, but one must not overlook the distinct fact that the "Manchurian Coal Capital" owes its present status to a large extent, to the several hundred thousand laborers, whose valuable man-power was highly instrumental in the attainment of such tremendous industrial growth. No one speaking of Fushun to-day would belittle the undying services and efforts of the mining laborers.

In recent years, a tendency toward industrial rationalization has set which has resulted in the drastic substitution of man-power with machinery. This trend is also recognizable at the Fushun collieries. Of late, the employment of machinery and improved methods have tended to increase the individual efficiency of workers, which resulted in the gradual decrease of the number of laborers, since a smaller number of workers can now perform mining operations that heretofore required a much larger number. However, the advent of the state of Manchoukuo ushered in a period of marked activity at Fushun due to the mounting importance of the black fuel, regardless of the improvement of efficiency and the number of workers was so boosted that there are no less than 40,000 workers engaged in mining at Fushun. Since they constitute an indispensable element, and since their efficiency immediately affects the standing and showing of the collieries, serious attention has been given by the management to the supervision of the working force, seeking to eliminate anything that might be detrimental to their welfare, or to accord favorable and proper treatment, as well as to introduce all sorts of beneficial conveniences. It is worthwhile noting that Fushun has never experienced a labor disturbance.

Future fuel to heat up homes, "in the making." Coolie miners digging for coal, Fushun Collieries

The Mining Laborers

The greater part of the laborers engaged in mining at Fushun are Chinese and Manchus who are commonly called coolies. They total 43,000 at the present time (inclusive of temporary employees) and are divided into three classes (1) day-rate laborers whose wages are calculated per day, (2) contract laborers, and (3) *patou*, all according to working ability, the treatment they receive, and other considerations. In the following paragraphs, an explanation of the nature and treatment of the three classes is consecutively attempted.

Day-rate laborers are employed at set per-day wages, and are paid according to a specified number of hours. If a day-rate laborer works overtime, his pay is increased by one-tenth per hour of the set number of working hours, but contrarily, if his actual working hours are less than the specified number, a decrease by one-tenth per hour is computed. To night-shift laborers, an additional stipend of MY .10 is paid. At the present time, the number of day-rate laborers has reached 13,000.

Unlike day-rate laborers, contract laborers are remunerated not according to the number of working hours but according to the amount of work completed. This system aims at the development of spontaneous urge on the part of the workers to work, in order that full efficiency may be expected of them. Therefore, capable and earnest workers can draw higher compensation for their labor. This system is deemed most appropriate to employ laborers of a low class, relatively irresponsible but highly inclined toward the acquisition of the highest monetary gains possible. At present, 22,500 contract laborers are on the payroll.

The *patou* is a Chinese term which denotes a foreman or a coolie head. Since the Japanese find little in common with the racial habits, customs, and language of the coolies, patou are placed over the laborers, who act as liaison agents between the management and the working force by relaying orders and instructions, direct the operations, and keep strict vigilance over morals and discipline. Hitherto, the character of the patou gave the appearance of a contractor, being a "big boss" over his subordinates and exercising a stern grip which reminds one of a feudalistic community. Consequently, there developed many evils and abuses. Some patou advanced loans to their coolies, others managed merchandise shops, all with the intention of fattening their private coffers. Aiming at the eradication of these evil practices, the mine authorities adopted remedial measures. Each coolie whether day-rate or contract was placed under the jurisdiction of the Fushun Coal Mines limiting the patou's authorities to pure supervision of work. The individual pay-off system was incorporated, merchandise shops for laborers were placed under the ownership and management of the authorities, and loans made to the coolies by patou were not recognized. The pay of the patou is connected with those of coolies under his direction, but he draws his personal salary as allowance. Patou are classified into two classes according to their ability. The Great Patou, nine in number, are appointed directly by the Superintendent of the Fushun Collieries. These were the "big bosses" under the situation described above, but after reorganization took effect, their position and influence have shown a downward trend. The Lesser Patou are appointees of divisional or departmental chiefs who are responsible to the Superintendent. These patou total fifty-four individuals and oversee the work of their details, but in recent years, Japanese employees have supplanted them, who in turn designated subordinate foremen called *lingtou* or *piaotou* selected from among the coolies. Taking advantage of their abilities, good results are being reaped, not to mention the satisfactory revision of the old system of supervision. The patou are paid allowances once a month which are

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*From *Contemporary Manchuria.*

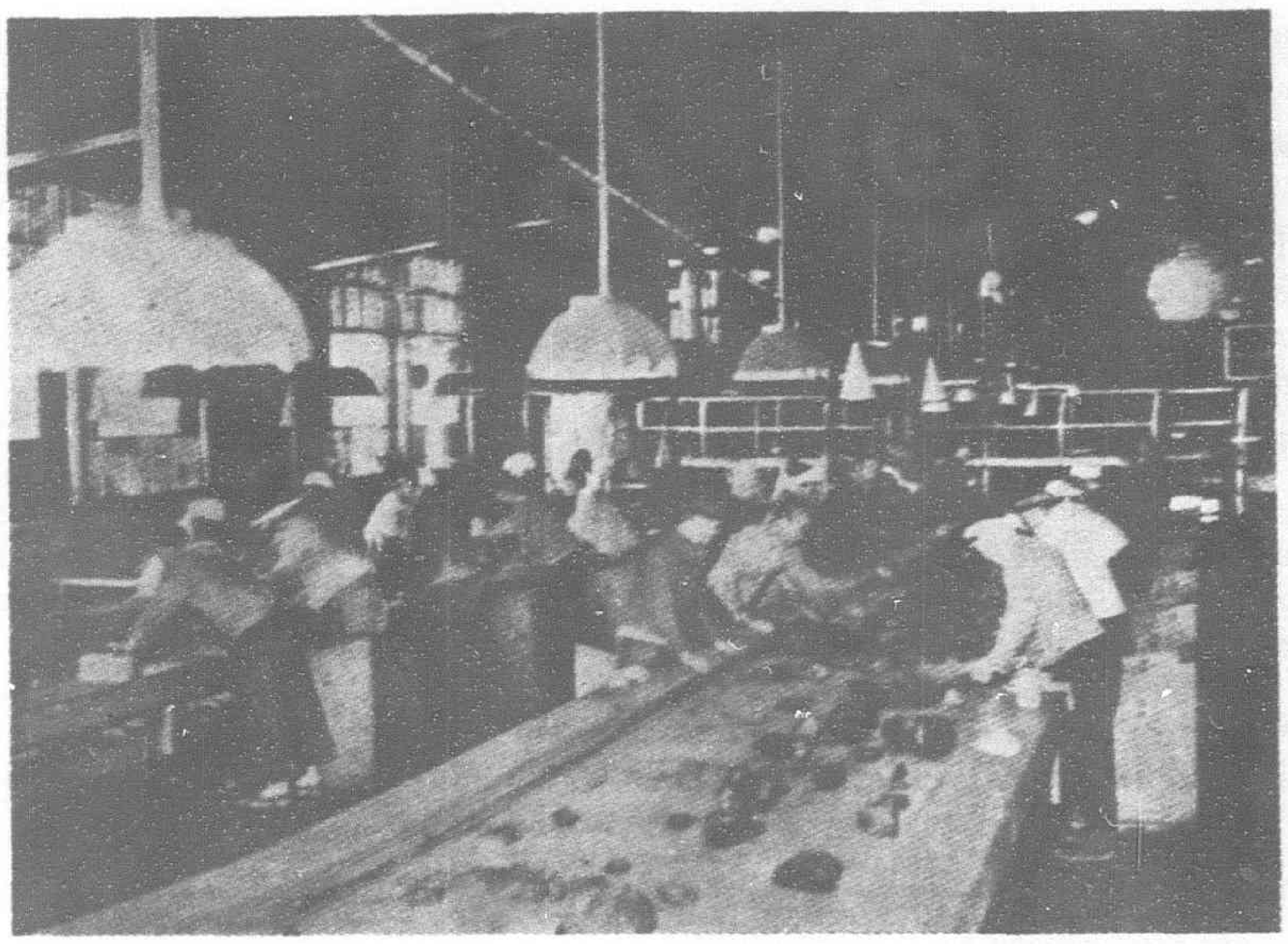
computed according to the total pay received by the coolies under the respective patou, as follows:

When supervising pure day-rate miners—not more than 115/1000.

When supervising contract laborers other than the above—not more than 80/1000.

Family allowance, housing allowance, and retirement allowance constitute other parts of the patou's income.

To the impartial observer, the mine laborers are exceedingly submissive and docile, yet diligent and industrious, but lack ambition to improve their ability or increase income, even among the higher paid workers. There seems to be little or no desire to elevate or better their standard of living. The cultural standard is also very low, while the greater part of them is still unenlightened in thought.



Grading coal according to size, one of the multifarious jobs at Manchuria's "city of coal," Fushun

About Coolies

We shall now refer to the native lands and the age of the coolie laborers.

As the common term "Shantung coolie" indicates, there is in Manchoukuo a great number of coolies who hail from Shantung Province. This fact is also applicable to Fushun where a number of them is found. A survey conducted in 1937 shows the native lands of coolies at Fushun are as follows:

		No. of coolies	*Percentage*
	Manchus	9,272	26
China	From Shantung	17,512	49
	From Hopei	8,396	24
	Others	438	1
	Total	35,618	100

The majority of the Manchu coolies listed in the above table come from Mukden Province while some hail from Jehol.

In looking over the ages of the coolies, it is rather difficult to obtain reliable data due to the absence of a registry system in China and Manchoukuo, but according to information acquired from the coolies themselves in a survey, it was found that apparently, there is a natural limitation placed on the range of ages, since the greater portion of those investigated was engaged in strenuous manual labor. The survey of 1937 reveals that there are:

		Per cent
Less than 19 years of age	1,389	4
From 20 to 29 years	16,962	47
From 30 to 39 years	13,452	38
From 40 to 49 years	3,596	10
50 years or above	219	1
Total	35,618	100

As it has been indicated above, the coolies coming from Shantung and Hopei provinces of China constitute 74 per cent of the total number of coolies at Fushun. Such being the case, one can readily see that they are merely soldiers of fortune who wander about not to seek a permanent settlement, but to earn a living for the time being with intentions to return at a suitable opportunity after accumulating a small fortune. Subsequently, most of the coolies at Fushun are unmarried, a mere third of the total living with or having families of their own as illustrated by the figures (for 1937) below:

	Day-rate laborers	*Contract laborers*	*Patou*	*Total*
Bachelors	5,718	17,543	3	23,264
Those with families	7,467	4,741	71	12,279
Total	13,185	22,284	74	35,543

Coolies are recruited at Fushun, along the railway lines in Manchuria, or in distant Shantung and Hopei provinces. In the past large scale recruiting was conducted through employment offices set up at Tsingtao, Tsinan and Tientsin, but the Company (S.M.R.)* in recent years has left no stone unturned in trying to improve the efficiency and selection of its laborers. As a result, the coolie force at Fushun remained intact in the face of a grand movement of laborers throughout the country following the Manchurian Incident, no shift or uneasiness at Fushun being perceptible. Desertions were extremely rare, vacancies being made good immediately by substitution with local recruits. Local recruiting is conducted primarily through recommendations made by patou or by other relations. For a long time, the name of Fushun as a labor market has been heard far and wide including Shantung and Hopei. Whenever recruiting in distant localities is sought, natives of the respective localities are sent out as recruiting agents who assemble prospective applicants under familiar conditions, but in all cases, the Company defrays cost of travelling, board and lodging *en route*, and transportation costs of the selected coolies. Not all those who have been selected are assigned to work at the coal mines. Upon arrival at Fushun, each recruit is subjected to thorough physical examination and fitness for work, and finger print recording, after satisfactory results of which, he becomes a full-fledged regular employee of the Company. Decision of acceptance and assignment of the type of work are made after a series of careful physical examinations as listed below, which is conducted by an expert physician.

(1) *Physical Examinations.*—Height, weight, chest expansion, grip, internal organs, respiratory, presence of diseases.
(2) *Sensibility tests.*—Sight, auditory, color tests.
(3) *Nutrition.*—Tests carried out according to the Tsurumi-Nakadate system.

To prevent fatal accidents before they happen, since the division of labor at Fushun is highly intricate, critical examinations to find out whether a certain coolie is fitted for work or not are conducted according to the following standardized tests.

(1) *General mental examination.*—Mental constitution and ability, sensory reactions.
(2) *Physical strength examination.*—Pulling power, carrying power.

Besides the above examinations, laborers applying for special or technical work are required to undergo further examination to ascertain whether they are well fitted or not. In looking over the results of the 1937 examination, we find that there were:

Applicants	30,208
Physically unfit	7,527
Lack of ability	623
Unsatisfactory personal records	2,415
Total	10,565
Percentage of failures	35%

The mine authorities have done their utmost to uphold the standard of efficiency of their laborers, assigning those best fitted to the various phases of mining operations, but due to the complete absence of census registration system, there were cases of single employees assuming several different names. So great was the difficulty of identification that the finger print system was adopted in 1924, and applied to all applicants for employment. Since the finger prints of no two persons are alike and together with its unalterable permanency, the finger print system proved itself more than a substitute for the census registration system, and gave evidences of remarkable convenience in the identification and distinction of individuals under employment. The following applicants are refused admittance after the finger print tests are conducted.

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*The reader is reminded that the Fushun collieries together with other coal mines are direct enterprises of the South Manchuria Railway Company.

(1) Those applying for a position without first completing formalities for discharge.

(2) Those whose discharge has not gone through a period of two months. However, this ruling is not applied to those who were discharged owing to the Company's circumstances, or those under special circumstances.

(3) Those with penal records or with unsatisfactory personal records.

There are 230,000 finger print records filed at the Company, but no less than 400,000 have undergone the examination since the inception of the system, indicating the gigantic movement of those either seeking admittance or discharge. Moreover, finger prints act each time as seals for receiving payment. These finger prints are carefully checked with the original ones on file.

Commencement of Work

Newly engaged coolies (after meeting the above-mentioned requirements) are given occupational names and numbers. The names usually denote the type or division of the work done by each individual, but the operations at the mines being too intricate and diversified, it is rather difficult to give names to all of the workers engaged in the different branches of work. The number would reach a high figure should this be done, and would require much more trouble in management than is necessary. Therefore, the day-rate laborers are grouped into 70 classes and the contract laborers into 15. The individual numbers are used in *kurikomi*, readjustment and reorganization, and pay-offs, and act as the sole means of differentiating and identifying individuals, or for clerical purposes.

Kurikomi is a miner's term implying assignment of laborers. Men are assigned to the different posts, and instructions or methods of operation are designated. Kurikomi is of little use in case of day-rate laborers owing to the fact that the type and place of work are quite similar day in and day out, but such is not the case with contract laborers, since it does not mean that the same man works each day. There are changes in the type of work to be conducted on a certain day which affects the number and type of workers for a particular working day. In consequence the management office requires the keeper of the laborers' quarters to file in a report each day indicating the name and individual number of the workers who will go to work, and dispatch this force to the mines upon requisition from the men directing operations on the spot. Each man assigned to work is given a slip. He reports to the junior officers in the mines with the slip which entitled him to work for the day.

New day-rate laborers receive payment immediately since the nature of their work assures a specified income, but contract laborers find it a little more difficult because they are paid according to the amount of work they accomplish. Therefore, a new contract laborer meets with difficulty until his ability and experience reach a certain productive standard to ensure a satisfactory remuneration. Naturally, there are many contract laborers who begin looking for new positions due to insufficient income. In the case of contract laborers alone, a period of twenty days is set aside for a training session. Each junior officer selects minor officials to instruct and train newcomers, to mold the new group into efficient workers. During this short period of "apprenticeship" each prospective contract laborer is guaranteed payment of MY .40 per day for his labor.

Attendance of miners in general has been very poor in contrast with that of other laborers, but due chiefly to the great concern attached to the improvement of attendance, considerable results have been obtained. The precentage for 1936 is as follows:

		Attendance including public holidays	*Attendance for total working days*
Day-rate laborers	..	91%	96%
Contract laborers	..	79%	82%

Because of the different types and phases of mining operations, there is no set length of working hours per day, but as a rule, men work eight to ten hours.

Income of the Laborers

Day-rate laborers are paid for their labor, i.e., between the 16th day of the previous month and the 15th day of the present month on the last day of the month. Contract laborers receive their month's pay, i.e., from the 1st to the last day, on the 12th of the following month. At the Kojoshi mine alone, there is a peculiar system of payment called *Manko Barai* or "Full Service Payment" when translated literally. Under this system, payment is made when the number of working days of a laborer reaches twenty days. Whenever any miner desires cash payment for his labor, he must have worked a total of twenty days before his desire is granted. Such being the case, the day on which payment is made varies with each individual. This system was adopted to prevent delinquency, since the Manchu laborers are in the habit of "playing truant" for two or three days following pay day, and cause a decrease in coal output.

According to an investigation made in recent years, the income for an average laborer is:

Day-rate laborer	..	..	..	..	MY 15.35 per month
Contract laborer	..	..	..	..	16.39 ,, ,,

Among the contract laborers, the attendance of miners immediately affects the coal output. For this reason, a bonus is given to miners only, to encourage continual attendance. In other words, if a miner works 6 manko (6 × 20 days or 120 days) or above, he receives a bonus computed according to the following:

Upon reaching	6	manko	.. ..	MY 2.50
,, ,,	12	,,	.. ..	3.50
,, ,,	18	,,	.. ..	5.00
,, ,,	24	,,	.. ..	7.00
,, ,,	30	,,	.. ..	8.50

Over 30 manko, MY 8.50 per 6 manko

Whenever day-rate and contract laborers are ordered to rest owing to the mine conditions, or when their day's pay do not amount to MY .30, or when asked to rest on their working day due to the Company's convenience, or when the overseer deems it necessary, they are paid a rest allowance of MY .30 per day. This is done to compensate for the difficulties of the laborers arising from the loss of a working day's pay, due to no fault of their own.

Laborers' Welfare

Mention of the serious consideration being made by the Company for the promotion of the welfare of the laborers and to safeguard their livelihood was made above, but a more detailed explanation of the subject will be attempted here.

Assistance. In cases of day-rate or contract laborers receiving injury during work, becoming ill, or being killed, monetary assistance is given to the coolies, as well as medical treatment. However, the allowance given will be decreased to half if the cause of an accident is due to the fault or a violation of regulations on the part of the workers.

Medical treatment is given at the Fushun Hospital, the expenses of which are borne entirely by the Company. Artificial legs and arms are supplied whenever the need for them arises.

To injured or sick persons who have been instructed to take a rest by their physicians are paid accident allowances for the duration of their recuperation period. Day-rate workers receive one day's pay per day and contract laborers MY .30 per day.

If conditions are none too well even after receiving medical treatment further allowances are given in the following manner:

First class.—Those losing both arms or legs, or virtually disabled to that extent, are paid an amount between 540 and 630 days' pay.

Second class.—Those losing the use of one arm or leg, or receiving equal injury are given allowances between 360 and 450 days' pay.

Third class.—Those retiring due to serious injuries are paid an amount equal to between 80 and 200 days' pay.

Fourth class.—Those receiving injuries but being able to report for work receive between 10 and 40 days' pay.

The survivors of workers who have lost their lives due to accident or illness caused during work receive a condolence allowance equal to 630 days' pay of the deceased plus funeral expenses amounting to MY 8.50. Those entitled to receive the above are life partners, direct relations, and brothers or sisters, but when the surviving recipients are brothers or sisters, the allowance is cut in half. In case there is no relative to receive the funeral expenses, the money is paid to the one who will conduct the services. Coffins are supplied by the Company, but when there is no need for one, an amount equivalent to the cost of a coffin or MY7.50 is given in addition.

One day's pay is calculated by dividing the total pay the deceased has earned during three months or three manko prior to his death, with the number of days worked. Any fraction of a sen above one-half sen is computed as one sen. In case of the deceased having worked less than three months or three manko, the total pay received is divided by the total number of days worked to get the average day's pay.

Mutual Aid Association

For a long time, the Company has given assistance in case of personal injuries, but besides expenses involved in medical treatment, food expenses are also necessary, while in many cases, the patients have sought passage to their homeland but stopped only by lack of money. To remedy such situations and to ensure more benefit for the laborers, a Mutual Aid Association was formed in November, 1924, after consultation with the laborers. Every day-rate or contract laborer, or patou is required to become a member of the organization and contribute monthly a sum of MY.25 while the Company pays a similar amount per month for the Association's funds. Based upon set rules and regulations all concerned are striving for the very best.

Payment from the Association's funds can be made only under the following conditions.

Medical expenses. Any member of the Association receiving medical treatment at the Fushun Hospital due to injury or sickness is given monetary aid from the Association's funds.

Whenever a member is told to take a rest by his physician due to injury or illness, or when he is confined in a hospital, an allowance of MY.10 per diem from the sixth day of his absence is given for sixty days, while in case of a member reporting to the hospital daily, he receives MY.15 per day.

If a member is ordered by the physician to return to his native land for cure, due to the nature of the injury or illness, 60 days' amount of the medical treatment and hospital allowance which he is entitled to is given him as travelling allowance.

In case the Company deems the labor too much for sick or injured members, and either retires them or authorizes retirement, retirement allowances are given under the following conditions:

(*a*) Those maimed for life—MY70 to MY100.
(*b*) Those who are considered unable to obtain another position—MY50 to MY80.
(*c*) Those being seriously crippled or handicapped—MY25 to MY60.

Funeral expenses amounting to MY6.00 are given to the individual holding the services for a deceased member.

To the family of deceased members, a condolence allowance of not more than MY40 is made, and is limited only to life mates or direct relatives living together with and receiving the support of the deceased at the time of death.

Merchandise Shop for Laborers

Up to this time, miners had been supplied with meals, while any necessary article for everyday use was procured at the merchandise shops managed by the patou under the former system as mentioned above. This practice showed strong earmarks of deliberate exploitation by the patou for their personal profit, and did everything but promote the welfare of the laborers under them. Therefore, the Company bought over the various shops in February, 1930, and placed them under its own management. Reorganization was effected, prices standardized, and in fact lowered the former retail prices by obtaining large supplies to sell at cost, thus insuring better quality at lower cost for the sake of cutting down the laborers' cost of living. There are at present thirteen stores throughout the mines or in the vicinity of the laborers' living quarters, wheat flour, corn flour, kaoliang, millet, wines, tobacco, seasoning, miner's caps, uniforms, leather goods, towels, soap, matches and practically everything that one might need, running up to a hundred and one articles. The prices for these articles are usually lower than the market prices by five to ten per cent. Cash is not necessary when making purchases at these stores since each laborer seeking to make use of the stores can procure his supplies by applying for a charge account to the Company. An account book is granted on which is stated the income of the laborer. The total amount of purchases made is subtracted from the monthly pay of the laborer. In general, the store management seeks to balance their sales and costs of operation, but whenever a profit is obtained, that amount is contributed toward the funds for the maintenance of beneficial establishments for the laborers, as it is explained below.

Living Quarters

It is the Company's earnest desire to accommodate all laborers in living quarters provided by the Company, but owing to the rapid increase in the number of laborers, approximately 74 per cent of the total workers are housed under this system. In consequence, quite a few laborers go to work from neighboring villages. A small fee is charged by the Company for occupancy, but it is far below any that can be gotten elsewhere. No doubt, the number of those desiring admittance is exceedingly large. Taking redemption fund, cost of repairs, coal, electricity and water charges into account, the average monthly cost for an unmarried coolie living in one of the Company's living quarters is MY.40 per month, while for a family it is MY.22 per square meter, varying of course with grade and equipment. Nearly all the buildings are one-storied, being built of bricks with tile roofings. They are equipped with either *ondoru* heaters (similar to the kan heaters) or with stoves (tilutzu) for heating; electricity for lighting, and joint-use water mains. A specified amount of fuel for heating, i.e., coal and mat-rush, is distributed free of charge. In the settlements, there are public water closets, baths, a barber shop charging low price, and the aforementioned merchandise shops, all for the benefit and convenience of the workers. The following figures give the number of individuals and families that are accommodated in the Company's living quarters, as of April, 1937.

Number of buildings accommodating single men . .	398
Total capacity	17,728 persons
Number of buildings for families	746
Total capacity	6,623 families

Amusement Center

In 1925, the Company set aside an area of 1,134,000 square meters of mining land on the right bank of the Yangpaipu which lies in the westerly direction of the new city area, and established an amusement center for the coolies at a cost of MY50,000. Since then, an additional sum of approximately MY60,000 has been contributed by patou and from the Laborers' Welfare Fund, while the Amusement Center Maintenance Committee has been organized to supervise the affairs of the Center. Within the huge Center, a miao (native temple) where the popular gods Laotzu, Kuanti, Tsaishen, Huoshen and Niang Niang are worshipped, has been erected, the idols of which were made by Peking experts who were called to Fushun especially for the purpose. In grandeur and magnificence, the miao is rivalled by only a few throughout Manchuria, and is attended by many all the year round. Then there is a large theater standing in front of the miao, where performances are held constantly free of charge for the enjoyment of the coolies. People literally flock to the shows like honey-bees to the flowers, to watch magicians, freakish displays, and what not. Peddlers and small open-door shop owners congregate outside the theater displaying their wares of inexpensive soft drinks or candies in order that the laborers assembled at the great center of pleasure might get an evening's enjoyment not only through their eyes but also through their mouths.

Manual Training Institution

For the benefit of those seeking employment or livelihood at Fushun due to their inability to work any longer at the mines on account of serious injury or sickness, or of those dismissed by the Company for similar physical reasons, the Manual Training Institute was established in 1924 to provide training and develop skill in handicraft. Since then a number of invalids have been admitted and given proper training. There is a natural limitation on the usefulness and utilization of the invalid's labor, and many difficulties have been experienced, resulting in numerous revisions and reorganizations, but at the present time, the Company is encouraging basket work, making of hemp ropes, mats and leather goods. All the products except leather goods are bought by the Company to supply its needs. For the past few years expenditure and income have been balanced. The institution is capable of admitting 60 individuals while the aggregate number accommodated to date totals 160 persons.

Laborers' Welfare Fund

Since 1926, the Company has accumulated funds and interest thereof, from funds that had been contributed by the Company and Manchu laborers which neither of them can rightfully claim, and set them aside to be spent for the promotion of the laborers' welfare and convenience. In addition, pays of regular employees that cannot be paid, and profits arising from the business handled by the merchandise shops have also been added to the Laborers' Fund since 1911. After necessary sums are appropriated for current needs, the remainder is deposited with the Company for future use. This fund is mainly used for conducting theatrical shows in the laborers' settlements, for motion picture shows, festivals of the miao, laborers' club expenses, and for miner's uniforms and safety caps totalling around MY20,000 or MY30,000 a year.

Saving Deposits

In the past, a contract laborer who had ended work, usually had no one to depend upon and was compelled to wander about aimlessly. Therefore, a savings deposit system was inaugurated in August, 1936, to insure livelihood of contract laborers after retirement. Each month, a coolie deposits MY.50 towards this end, and the Company not only pays a high interest on the deposits, but also adds funds of its own. After serving ten years, a laborer is entitled to MY200, and after 15 years, MY300, a sum that is more than twice the amount deposited by the laborer.

Laborer Finance Section

For the purpose of stabilizing the daily lives of laborers, the Laborer Finance Section was organized in November, 1936. Credit at low interest is advanced to new laborers for the purchase of mining suits and safety hats, or to any one urgently in need of cash.

Laborers' Clubs

There are Laborers' Clubs at the Amusement Center, the Shale Oil Plant, Laohutai Mine, Wantawu Mine, Hsintun Mine, and Ryuho Mine. The Laborers' Club is a civic center for amusement and comfort of the laborers. There are equipment for ping-pong, native chess, and musical instruments at the disposal of the laborers. At the Laborers' Club of the Amusement Center, there are foreign newspapers and books for the education of the laborers while for those who are ambitious, lessons in the Japanese language are available. Considerable progress has been made in this field. Running expenses of Laborers' Clubs are met by the Laborers' Welfare Fund.

India a Growing Market for American Goods

By U.S. Trade Commissioner BASIL D. DAHL, Calcutta, in Commerce Reports

In spite of many adverse factors India has been an active buyer of certain American products for many years, and a large number of American manufacturers have firmly established themselves in the market. Generally speaking, however, the balance of trade between the two countries is always greatly in India's favor and the year 1937 was no exception to the general rule. While imports from the United States increased in value to $39,390,000 as compared with $31,090,000 in 1936, exports to the United States increased from $62,282,000 in 1936 to $77,453,000 in 1937, or to nearly double the value of imports.

Roughly, one-third of India's imports by value from the United States in 1937 consisted of motor vehicles, lubricating oils, pneumatic tires, and automotive replacement parts and accessories. British manufacturers of low-priced passenger cars offered very keen competition and, to a lesser extent, German and Italian cars also; but American producers, including Canadian plants, supplied in the neighborhood of 41 per cent of new passenger car units sold in 1937.

American Products Appeal to Discriminating Buyers

American manufacturers of industrial machinery also made noteworthy progress in the Indian market during the year, while American radio-receiving sets, various types of canned and preserved foodstuffs, hosiery, toilet articles, cutlery, hardware, proprietary and patent medicines, and a wide range of other articles were on sale in most of the principal trade centers throughout the country. American merchandise in these lines is often considerably higher priced than similar lines produced in India or imported from other countries, but finds preference because of its high quality among a large number of the more discriminating buyers whose purchasing power is sufficient to permit them to follow their tastes. Unfortunately, however, the purchasing power of the masses is exceedingly low, and the price levels of most American products range above their ability to buy.

Industrialization Changing Import Demands

Primarily, India's economic prosperity is dependent on the well-being of its agricultural population which comprises about 90 per cent of the 370,000,000 inhabitants. However, modern industrialization is rapidly going forward in many of the principal centers of population, while the betterment of the rural classes is being pushed ahead through great irrigation works which are rapidly tending to free the farmer from his former complete dependence upon the monsoon for his livelihood. The effect of these two forces moving in parallel lines will probably be to direct the trend of the Indian market for imported items away from articles of consumption and toward larger quantities of industrial machinery or other capital goods.

American manufacturers usually distribute their products through one or more importing wholesale or agency concerns in India. The former buy on their own account and carry stocks, while the latter sell to the wholesalers on commission. The agents may occasionally carry small stocks of their "best sellers," however. Department stores, specialties shops, a limited number of the bazaar shops, and some large consumers, such as hotels, often import directly from the foreign supplier.

Distribution Usually Made from Calcutta or Bombay

Generally speaking, foreign manufacturers with good connections in Calcutta, Bombay, Madras, Karachi, Lahore, and Delhi are in a position to develop the distribution of their products throughout India. Representation in all-India is frequently entrusted to one company with its head office in Calcutta or Bombay, and branches in the other important cities. But many concerns prefer to divide the country into districts, usually four to six, with one firm having exclusive sales rights in each. Ordinarily, these companies should be located in the above-mentioned cities. Formerly old-established British firms were usually given preference as import agents, where American-controlled agencies were unavailable, but in recent years a number of Indian houses have developed interest and experience in handling foreign trade.

American firms seeking representation in India should quote prices c.i.f., Indian port of entry, as this is preferred by the importers. A large portion of the merchandise of American origin shipped to old-established and well-known Indian firms is sold on terms of 60 days, documents against payment, and, in some cases, documents against acceptance. However, the generally accepted terms are payment 60 days from date of invoice.

What Air Transport Means to the Pacific Area

By A. PLESMAN (Bulletin of the Colonial Institute of Amsterdam)

The Pacific Ocean is bounded, one might say, on the South by the Netherlands Indian or Malay Archipelago and Australia, to the Eastward of which lie a number of groups of small islands. The potential significance of this Melanesian and Polynesian area is being gradually enhanced at the present time by the possibilities of the international air traffic.

Straight across the North Pacific runs a very important airline. It goes from Hongkong to Manila and thence via Guam, Wake Island, Midway Island and Honolulu to San Francisco. This line has been in operation since 1936 and although the regularity of this service was not one hundred per cent at first, yet it may safely be asserted that air transport across the Pacific is most certainly within the range of present tangible possibilities. Moreover, when Pan American Airways proceed to use their new 45 tons, 6,000 h.p. planes on this route, a very stable, regular air service will be established between Hongkong and San Francisco, which will prove of great importance for the transport of both mail and passengers. It is not too much to expect that this service, now a weekly one, will become more frequent later on, and gradual development in this direction will enhance the importance of the Hongkong-San Francisco route still further. Within some years Australia will be linked with Vancouver via New Zealand and Honolulu, thus establishing a line that will run almost diagonally across the Pacific. In view of conditions in the countries thus linked, the first of these two routes will always be the more important one, but the second will also attract a considerable volume of traffic and business.

The Fokker Douglas D.C. 3 Plane. These machines are used for the K.L.M. Royal Dutch Air Lines Service to the Far East

It is hoped that in due course the Netherlands Indies will connect up with the Manila-San Francisco and Manila-Hongkong lines by means of the Surabaya-Banjermasin - Balikpapan-Tarakan (and possibly Zamboanga)-Manila line. When this connection is definitely established the Malay Archipelago, with its 60 million inhabitants and its many products—petroleum, sugar, rubber, tea, coffee, cinchona, gold, etc.—will be only four days' journey from America. This island world, which is so extremely attractive from the tourist point of view, will then be within easy reach of America as well as Europe. Even now thousands of tourists come to Java, Bali and Sumatra by sea to enjoy the tropical splendor which these islands have to offer, so that a further development of tourist traffic may be confidently expected as air communications improve.

The two above-mentioned airlines are not the only ones that connect Australia and the Netherlands Indies with America. There are also good airlines from Australia via the Netherlands Indies, Straits Settlements, Burma, British India, Iran and Irak to Europe and, in the future, across the Atlantic Ocean, to the United States and Canada.

Over Malay Archipelago

An important system of airways is operated in the Malay Archipelago by the K.N.I.L.M.—Koninklijke Nederlandsch-Indische Luchtvaart Maatschappij, or Royal Netherlands Indies' Airways—by which large centers in the East of the Indies are connected with those in the West of the Archipelago, and those in the North with those in the South. As soon as permission for this is granted by the Government of Indo-China, the line from Batavia via Palembang to Singapore will be extended to Saigon, from which place lines run to Hanoi, Hongkong and other ports of call in China. In the latter country an extensive air traffic has been developed, regarding which the following details may be of interest.

Civil aviation in China—a country where, on account of its vastness, air transport is most appropriate—dates from 1919. But the effort initiated at that time came to a premature end as a result of the civil wars which broke out continually. Much capital was lost. It was not until 1929 that the effort was renewed, this time with lasting success. In that year the then minister Sun Fo was instrumental in his country's concluding a contract with American interests affiliated with the Curtiss concern, a contract which in 1930 was extended by the Department of Traffic. The result of this agreement was the founding of the China National Aviation Company with a capital of ten million American dollars. Fifty-five per cent of this capital is in the hands of the Chinese Government.

At the same time the Department of Traffic entered into a contract with the German Lufthansa A.G. with a view to establishing the "Eurasian Aviation Corporation," an enterprise with a capital of three million dollars—which sum was increased to 5,100,000 dollars in 1933. Two-thirds of this capital was furnished by the Department of Traffic and one-third by the Lufthansa. The main object of this company was to establish an air connection between China and Berlin, via Siberia. For two months a trans-continental service was maintained via Manchuli and Siberia, but events in Manchuria made continuation thereof impossible. Since then international complications, which have influenced aviation everywhere to a very marked extent, have prevented the definite realization of the original plan. Meanwhile the company is devoting itself temporarily to inland aviation in China.

A third company was established in 1934 at Canton—the South-western Aviation Corporation. This is the smallest of the three companies; its activities are confined to the South-western part of the country; yet it claims to be the only really national air transport company in the Chinese Republic.

Until the outbreak of the Sino-Japanese conflict, last July, the three Chinese air transport companies between them ran the following daily services:

(1) Shanghai-Peiping, via Nanking, Haichow, Tsingtao and Tientsin;
(2) Shanghai-Hankow, via Nanking, Anking and Kiukiang;
(3) Hankow-Chungking on the upper Yangtze, via Shasi, Ichang and Wanhsien; and
(4) Chungking-Chengtu (in Szechuen Province).

In addition, the following services twice or three times a week were maintained;

(5) Shanghai-Chengtu as an express connection;

(6) Shanghai-Canton, via Wenchow, Foochow, Amoy, Swatow and Hongkong;
(7) Chungking (upper Yangtze)-Kweiyang in Kweichow province;
(8) Shanghai-Lanchow, in Kansu province, via Nanking, Chengchow and Hsian;
) Lanchow-Suiyuan, a province bordering on Mongolia;
(10) Peiping-Suiyuan;
(11) Peiping-Chengchow, in Honan Province, via Taiyuan;
(12) Chengchow-Canton-Hongkong, via Hankow and Changsha;
(13) Sian (also called Changan in Shensi Province) into Szechuen and Kweichow Provinces;
(14) Canton-Pakhoi;
(15) Nanning (in Kwangsi Province) to Lungchow.

In these airlines chiefly Junker and Douglas planes are used and these are very popular. In regard to both speed and safety, air transport in China in the last two years can bear the test of comparison with that in other countries.

The Chinese airways, as a system, are connected up with South-eastern Asia in two centers, viz., Hongkong and Canton. Hongkong operates a weekly Imperial Airways service to Penang on the route Singapore-London; Canton a weekly connection with Hanoi, served by Air France, and this runs on to Europe also.

Air Services Hampered

Unfortunately the conflict that has arisen between Japan and China is seriously hampering the development of these air services. We are credibly informed that the American pilots working for the China National Aviation Corporation have been recalled to their country. With the help of modern airways China might look forward to a future of rapid development; naturally, this huge country with its 400 million inhabitants, its long distances and its important centers offers a vast field for aerial activity.

As we saw just now, China is connected by air lines running from Hanoi to Canton and from Penang to Hongkong, which should be regarded as extensions of the various lines from Europe to Bangkok operated by Imperial Airways, Air France and the K.L.M., or Royal Dutch Airlines. Imperial Airways has achieved a frequency of three planes a week between London and Singapore; the K.L.M. runs three machines a week from Amsterdam to Batavia and back via Singapore, and Air France one a week between Paris and Hanoi. The Germans, too, would be glad to participate by operating a line of this sort, especially now that their plan of combining with the Eurasian Aviation Corporation to run a line to China via Siberia, has been indefinitely postponed.

Another possibility the Germans have contemplated is operating an airline to China running via Bagdad, Teheran, Kabul, and Jarkand, and ending in Peiping, but here again they are faced with such great difficulties, that in all probability such a line would not be able to function regularly for some time to come.

Japan, too, operates an extensive system of air ways. These run across the Japanese Archipelago and further across Korea and Manchoukuo, and finally from Japan to Shanghai. These lines will also suffer greatly as a result of the present difficulties between Japan and China, and possibly their development will be considerably hampered.

The following points in regard to Japanese aviation are of interest.

Japan was rather tardy in laying the foundations of civil aviation in her territory. After the world war her first care was to organize military aviation. On this she concentrated all her attention and efforts during the years 1923 to 1925, with the result that the public interest aroused in aerial navigation in general was not sufficient to act as a stimulus to development in this field. Furthermore, Japan had then no aeroplane industry, or very little, and furthermore difficulties involved in finding suitable landing places as well as peculiar atmospheric conditions prevalent in that country, caused the loss of much material and many human lives.

Japan's Efforts Bear Fruit

From 1926 on the Japanese government began trying to interest capital in this matter, but it was not until 1928 that these preliminary efforts bore fruit. However, in October of that year the Nippon Koku Yuso K.K. (Japan Air Transport Co.) was established. Among the big shareholders in this company we find several of the large well-known Japanese concerns—Mitsui, Mitsubishi, Sumitomo and Yasuda. The sum total of all the shares in their possession does not, however, amount to 50 per cent of the company's capital. The State is not a shareholder but, as might be expected, keeps a check on the management by means of an extensive system of subsidies.

The Japan Air Transport Company operates a service from Tokyo to Dairen via Nagoya, Osaka, Fukuoka (in Kyushu Island), Urusan (in Korea), Keijo (Seoul), Heijo and Shingishu, the distance covered being 2,118 kms. This service includes six flights per week over the whole route and twelve per week between Tokyo and Osaka and between Tokyo and Nagoya. Another regular service is maintained from Fukuoka (Kyushu) to Taihoku in Formosa; from Taihoku there are branch lines to various places in the island, such as to Takao (via Taityu) and to Karenko (via Giran).

Furthermore there is a daily service from Tokyo to Sapporo, in the Hokkaido, via Sendai and Aomori; from Tokyo to Nigata and from Tokyo to Osaka via Toyama. From Osaka daily services are operated to Koti (in Shikoku Island) via Tokushima and to Matue via Tottori.

Development in Manchoukuo

In what is now called Manchoukuo there was no civil aviation before the Manchurian incident of 1931. Before 1929, there was in Manchuria only one place where planes landed, namely Dairen, where twice or three times a week one called belonging to the service running from Japan via Korea to the Kwantung peninsula, a territory which was leased by Japan from China, after the Russo-Japanese war in 1905.

But after September, 1931, all this was changed. Military operations made the use of aircraft absolutely necessary. In Manchuria, we might say, military aviation acted as promotor of civil aviation. At first the mail was carried by military planes. The flying fields prepared for military purposes proved invaluable in connection with civil aerial navigation when that was established not long afterwards.

In the summer of 1932 the Manchurian Air Transport Company was established (the Manchoukuo Koku Yuso K.K.) which was given the monopoly for civil aviation in Manchuria. The necessary capital (Y.3,850,000) was furnished by the Manchoukuo Government, the South Manchuria Railway Company and the Japanese Sumitomo concern. In the course of that same year the first services were established in which were included Hsinking, the new capital, and Tsitsihar, Harbin, Mukden and, naturally, Shingishu on the Korean border with a view to a connection with Japan. Since then a system of airways has developed all over this new state with lines radiating from Mukden, Hsinking and Harbin as centers.

If we take the line between Dairen and Manchuli in the North-west on the Siberian frontier—a distance of about 1,600 kms—and call that the trunk-line, then Mukden is the first junction. From here a branch line runs to Linsim via Chinchow, Choayang and Chifeng. At Chaoyang this line branches again and runs to Jehol via Lingyuan. Eastwards goes a line to Shingishu on the Korean border.

From Hsinking, the new capital and the second junction on the great trunk line, a branch line runs via Kirin, Tunhua, Lungching and Tumen to the Korean port of Rashin, where the Japanese have lately been making many improvements. There is a direct connection between Kirin and Harbin via Hsinchan and Wuchang.

The third junction is Harbin and from here a line runs North to Heiho via Peian and Erchen and another North-east to Fuchin via Ilan and Chiamussu. Tsitsihar is connected with Heiho via Laha and Mergen.

The planes used by the M.K.K. are for the most part Nakajima Fokkers, that is planes built in Japan with a Fokker license. Since 1933 these planes are also being built in Mukden as in that year the license for Manchuria was obtained. Naturally aviation plays an important part in the pacification of this vast and often almost impenetrable country.

Soviet Quantity Unknown

As regards the Soviet Far East, available data do not appear to be sufficient to warrant a comprehensive survey of air-transport in that vast and interesting area. It is, however, worth our while to note that aviation is being used to a remarkable extent, both in the Soviet Union and in the Far Eastern Republic, for other purposes besides communication between existing centers of population. Geographical surveyors and geological prospectors are making an extensive use of aircraft, with the result that they are able to work on a scale and at a pace otherwise absolutely unattainable owing to the physical conditions of the country. The same applies to shipping in Northern waters. Pacific ports like Vladivostok are no longer ice-bound to the extent they were formerly. In these regions aeroplanes give guidance to ships and keep channels open —if necessary by dropping specially constructed ice-bombs to assist ice-breakers. An aeroplane industry has been established in the Soviet Far East and elsewhere in Siberia, and this is conscientiously fostered by the authorities, both civil and military.

Crossing the Bering Sea and turning to the Eastern shores of the Pacific Ocean we find a system of airlines from California to Alaska, and in fact along the entire West Coast of both North and South America air services are being operated. The most prominent position in this remarkable and extensive system of communication is held by Pan American Airways. Airlines are being exploited from Los Angeles via Mazatlan to Mexico City and further to the South via San Salvador to Panama. From the South an airline connects Santiago via Lima with Panama.

Many airlines are operated in Australia too. Naturally, most of these are concentrated in the South-eastern portion of the Continent, but the whole Commonwealth is included in the system. Australian and English airline interests run three services a week from Sydney to Singapore and thence to Europe. Recently the Government of Australia has granted permission to the Dutch aviation enterprises to undertake the exploitation of the route Batavia-Sydney. Later on this line will enable passengers and mails to go from Australia to the Philippines and China via the Netherlands Indies. In the Philippines connections can then be made by which to continue to San Francisco.

Dimensions Reduced ?

The above has no doubt given the reader some idea of the significance of existing airways across the Pacific Ocean and in the countries that encircle it. Obviously, ten years hence the dimensions of this area in terms of time will have been considerably reduced as a result of aerial navigation, since its furthest limits will then be only a few days' journey apart.

If the development of this air traffic proceeds peacefully and steadily, the result will be more airlines, a more frequent service and an ever rising standard as regards the planes with which the various lines are operated.

This development will certainly do much to facilitate mutual interchange of ideas among different peoples and to foster international trade. Ten years represent but a very short moment in the life of a people, yet in respect to the development of aviation it is a considerable period. Looking back over the achievements of the past decade we begin to realize what the next ten years may bring forth. Across and around the vast expanse of the Pacific Ocean a net-work of airways will be developed which will far surpass our most daring dreams. If this expansion promotes trade and the growth of ideas, as it surely must, it may also, in a very real sense, be instrumental in furthering the spread of the ideal of universal peace.

However, at the moment of writing, the relations between Japan and China are such that it is difficult to foresee what the future will bring. As already remarked, Chinese aviation is very severely handicapped by the present conflict. It is hard to judge as yet how much lines in other areas will be affected, but one thing is certain, namely, that converging lines feed one another and that traffic breeds more traffic. Hence, if one group of lines is hampered in its development, this fact exerts an unfavorable influence upon the growth of other lines.

In the United States a closely knit system of frequent services is being developed. By air one can go from the West Coast to the East Coast in thirteen hours, and planes run thrice daily. It may certainly be expected that these services will become even more frequent and that an even greater amount of comfort *en route*, regularity of schedules and safety of transport by air will be achieved in the near future. American manufacturers of aeronautical material, whose plants are working to capacity, are able to put great quantities of their products on the market—both land planes and sea planes, some of them weighing as much as 50 tons. If in due course they succeed in their constant endeavors to increase the power of these aircraft to any considerable extent, a very much more rapid development may be expected in years to come.

Present circumstances make unhampered growth very hard to attain and it is to be hoped that normal conditions will soon prevail once more. As soon as this happens each of the governments concerned in the administration of territory in the Pacific Area should accord the greatest possible measure of freedom of growth to aviation and grant permission on the largest scale possible for the use of air ports and air routes.

As soon as peace prevails again in the Pacific Area, the development of air services will be resumed, but it appears to be unlikely that this development will be able to keep abreast of the constantly growing requirements of the situation in this vast area.

A time is bound to come when the demand for transportation by air will be many times what it is now. Traffic of any kind promotes prosperity ; hence, to hamper traffic in any way is to be guilty of impeding progress towards prosperity, and since, as the United States Secretary for Foreign Affairs has repeatedly observed, the free development of trade is the best guarantee for peace, it must surely follow that the free development of intercommunication, too, will help to establish and maintain peace.

Globe Marked Off

In order to define what—from the point of view of aerial transport and connections—is meant by the Pacific area, we may draw an imaginary line around a portion of the earth's surface bounded on the North by the North Polar circle and on the South by the Tropic of Capricorn, on the West by a line passing through Fremantle, West Australia, to Sabang off Sumatra, and from there to Bangkok, Peking and the Wrangel Islands and on the East by a line running from Cape Barrow to New Orleans and on via Curaçao to Montevideo. The vast stretches of land and sea thus marked off from the rest of the world represent one fifth of the entire surface of the globe. This fact alone will enable the reader to realize the enormous importance of the Pacific Ocean and the countries that encircle it.

If cultural, economic and political developments are allowed to proceed steadily and freely in this area, air transport will be playing an important rôle in those regions ten years hence. And even in spite of all the difficulties that lie in the way of its growth now and may be laid in its path in the future, the gradual development of aviation is sure to come to pass. For air transport is greater than our human thoughts about it. Its vitality is so great that it would be impossible to check its growth. And we human beings will rise with the development of aerial navigation to greater heights, where nobler moral standards will come to birth and a better mutual understanding.

New China Invites Foreign Investment

"Now that the preparations for the establishment of the North China Development Company and its subsidiaries are making steady headway, the provisional government of China has decided to consider how to invite foreign capital for the North China economic development by establishing a foreign capital import committee." (*Osaka Mainichi*, July 17, 1938).

The appointment of this committee which is to consider the terms on which to acquire foreign capital, the amount of foreign capital, and the volume of foreign goods necessary, etc., shows that Japan intends to pursue the policy of the open door.

Flood Prevention in China*

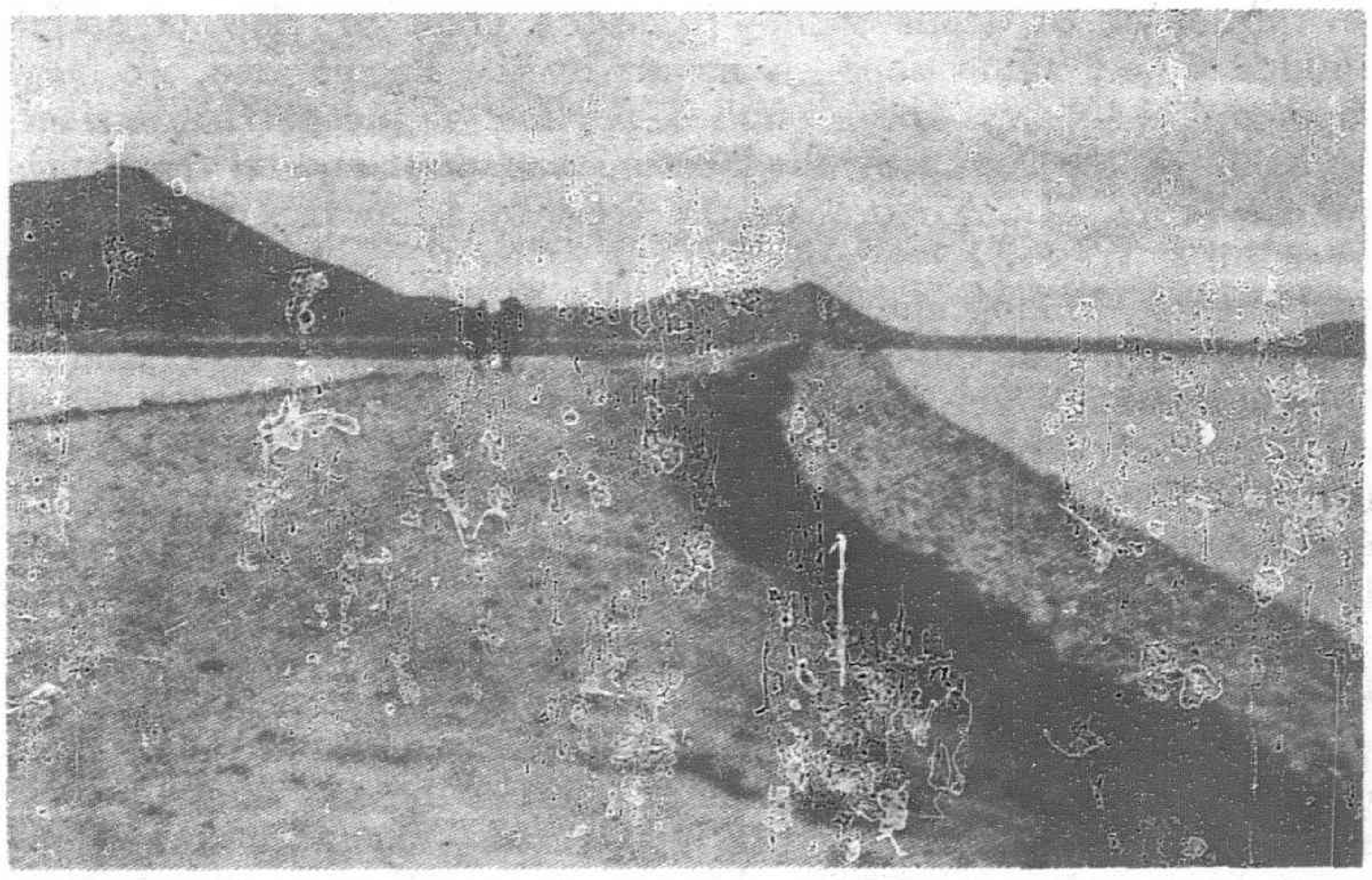
A close association with the people of China for nearly thirty years, and a lengthy study of their social and economic life, has convinced the writer that water control is the most important subject for research and for constructive work in that country. Whatever may be the political changes in the life of a nation of 450 million people, the struggle for food will continue. The production of food in China is almost entirely dependent upon irrigation and flood prevention. The hydraulic engineering works completed and projected, mainly with the object of increasing food supply, are of great historical and technical interest. A fascinating aspect of the subject is the fact that China offers unique opportunities for research work concerned with field hydraulics. Very much more information is required concerning the laws of silt transportation to make it possible to determine what is the best solution of the flood problems of China's heavily loaded silt-bearing rivers. No race can surpass the Chinese in patience, perseverance, and powers of concentration upon an intellectual problem. Those characteristics are essential for scientific research work. Scholars have, throughout the ages, been the most highly respected members of the community. Conflict has never affected the reverence of the nation for learning. Destruction caused by warfare is nothing new in the land; it has always been followed by active reconstruction. We may therefore expect that Chinese engineers will during this century make valuable additions to the general store of knowledge concerning water control. Meantime, let us see what has been accomplished in recent years.

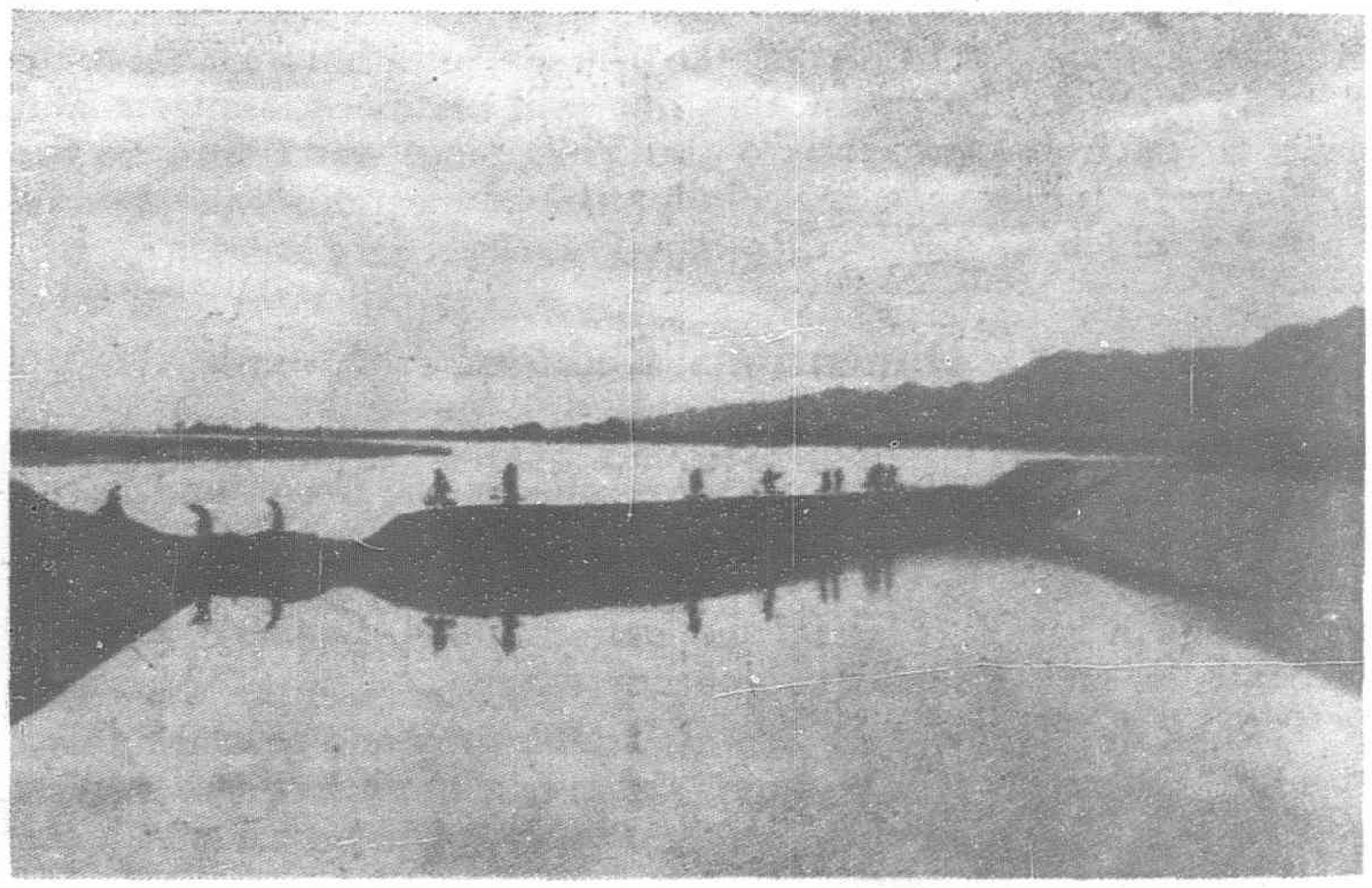
The hydraulic problems of China can be divided into five sections, of which the first three have always been of vital importance to the life of the people, the other two have come into prominence in recent years. These sections are :—(1) Flood prevention ; (2) irrigation ; (3) river and canal navigation ; (4) port development ; (5) water power utilization. Unfortunately, it not infrequently happens that plans, ideal for any one of these sections, would, if carried out, injuriously affect works concerned with one or more of the other sections.

Much of the task of bringing waste land into cultivation, of draining swamps, and the construction of canals for irrigation, was, for more than 2,000 years, performed in China by the State, but there was no central organization for planning practical methods of controlling the rivers in all their lengths. It was often done in a haphazard manner, and frequently political rather than economic considerations affected the schemes. Each district carried out the works of which local officials approved, or had initiated, and often the work on one section of a river adversely affected another district.

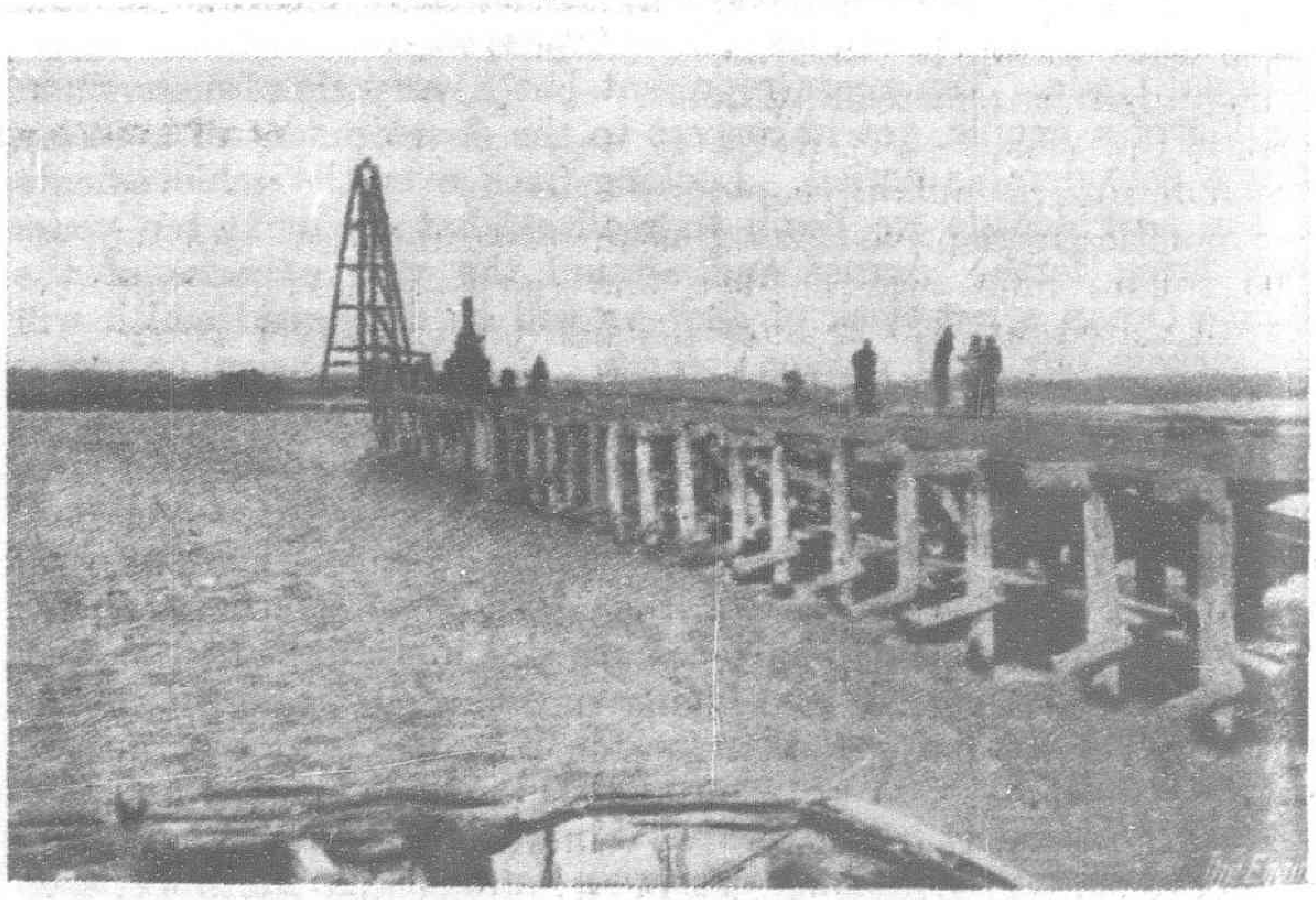
The Famine Relief Commission's Work

The Chinese International Famine Relief Commission (C.I.F.R.C.), formed in 1921, organized an Engineering Department (1923) to unify, as far as possible, the technical work planned to fight flood and famine in China. This Department, especially in recent years, has been supported by and has worked in co-operation with the Central Government and other Chinese organizations. It is possible to give only a general outline of the difficult water control problems which it has studied and the valuable work which it has accomplished in recent years. The publications of the


Typical Dyke on Yangtze River


Dyke Repair in North China

Excavation of Irrigation Canal


Pile Trestle for Construction of Dam

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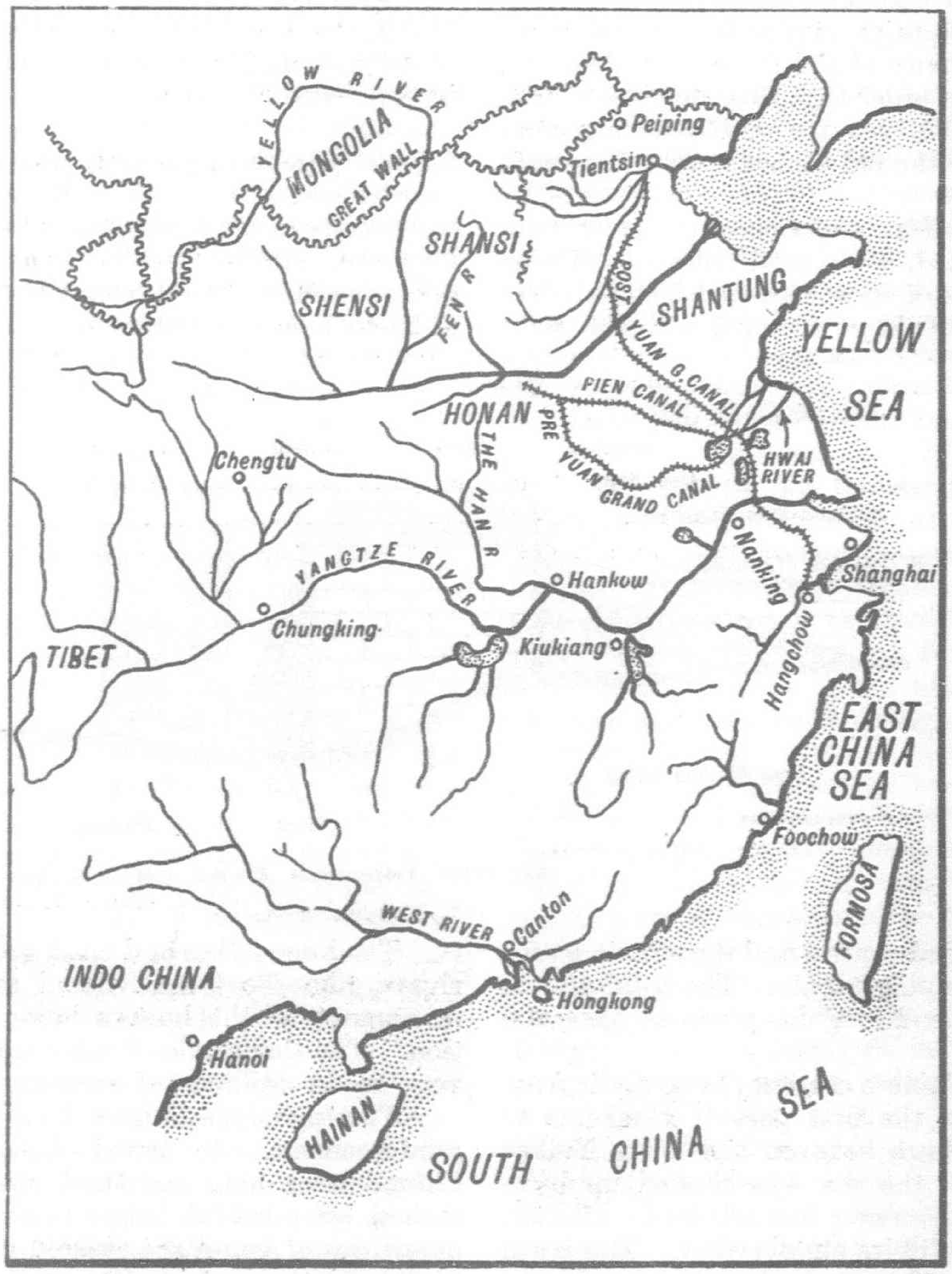
* By the Far Eastern Correspondent of *The Engineer*, London.

C.I.F.R.C. and the contributions made by its engineers to technical societies in China, which deal in detail with individual projects, have been freely drawn upon in this attempt to provide a bird's-eye view of hydraulic works, particularly those concerned with flood prevention in different parts of a very large area of land. Amongst the foreigners who have earned the gratitude of those able to appreciate their work for China are Major Todd, Sir John Hope Simpson, and Messrs. Stroebe, Eliassen, A. M. Shaw, and Boudrez. A tribute must also be paid to scientifically trained Chinese engineers, amongst whom are Hsu Shih Ta, C. Y. Kao, T. C. Hsi, Pei I-hsiang, H. Li, and many others, who have done excellent work.

The work has included, not only a vast amount of dyke construction, but the building and repair of many hundreds of miles of irrigation canals, surveys of all description, the laying out of many hundreds of miles of new roads in various parts of the country, provision of wells, reservoirs, new bridges, etc. It is impossible to estimate the economic value of this practical aid to the millions of Chinese affected by it, large numbers of whom otherwise could never have survived. The engineers have lived in districts infested with bandits or stricken with famine or flood, and have often suffered privations and faced dangers to life. It has become common in these days to jeer at the mention of "the white man's burden," but foreign engineers have carried the burden in China, and deserve recognition not only for technical ability, but for their courage. They have convinced Chinese officials of the necessity for an official centralized water control authority for the whole country and of the efficiency of modern methods of construction. In the decade 1927-37 the State, aided by foreign experts and finance, encouraged scientific researches and carried out excellent hydraulic engineering works.



"THE ENGINEER"

WATERWAYS OF CHINA

Devastating Floods

The awful destruction that has been caused by floods will be realized when it is stated that in 1931, when four rivers broke their banks (principally the Yangtze), the loss of crops was estimated at 400 million dollars (silver), and 140,000 people were drowned. In 1935, in one district affected by a break in the Yellow River dyke, from four to five million people were practically deprived of all means of sustenance. An area of 6,000 square miles was flooded, and the total loss of property was estimated at 240 million dollars (Chinese silver currency). That was only in one district. At the same time in other parts of the country enormous losses of life and property took place. In the Yangtze Valley 9,700 square miles in area were inundated, and near Hankow 10,000 people were drowned in a few hours during the 1935 floods. The total loss by floods in 1935 was estimated by the Chinese Maritime Customs at £28 millions. In these days of erratic currency values it is difficult to give estimates in sterling, but in China a dollar is always a dollar for the peasant, whatever its value for exchange. At the time of writing, it is difficult to know what is the damage done by recent floods. It is said that the Chinese wilfully broke down the dykes in order to harass the invaders, a strategy often employed in warfare, but involving great sacrifice. The Yellow River surged through a gap a quarter of a mile wide and more than 400 square miles of land were submerged. Nearly 700,000 refugees fled from the area. It is believed that in the defence of Hankow dykes will be cut.

The River Systems of China

The large waterways of China are shown on the map, but it is impossible in any map of China to give the reader a complete idea of the enormous number of creeks that criss-cross thousands of square miles in Central and S.E. China. Every engineer knows of the Grand Canal of China, about 1,000 miles long. It is only one of the several important artificial waterways which were constructed for economic and administrative purposes centuries before navigable canals were made in England. Wherever possible, the rivers of China are linked by canals; for hundreds of years there was continuous transport of goods and passengers by inland waterways from Canton to Peking, 1,400 miles, except for a short distance of 40 miles, where there is a path over the mountains that separate the watersheds of the Yangtze and Canton river basins. There are twenty-six running miles of creeks, canals, etc., to each square mile of the large area of cultivated fertile plain in the Yangtze delta. In the Canton delta of South China, personal observation leads the writer to believe that in places that record is exceeded.

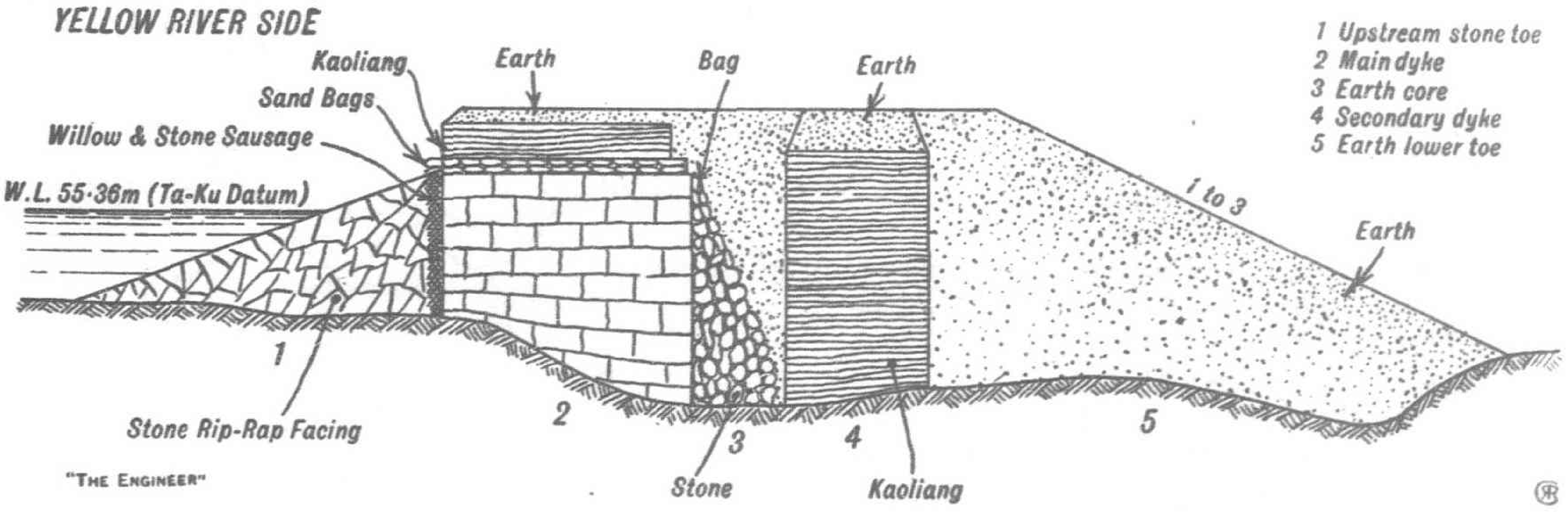
The most important river systems can be placed in four divisions. There are the five relatively small, but densely silt-laden rivers of North China, which converge at Tientsin, and have one common outlet to the sea, the Hai Ho. There is the large area supporting about 100 million people that is affected by the Yellow River, 2,500 miles long—"China's Sorrow"—and its numerous tributaries; these rivers are also heavily laden with silt. They drain an area of 320,000 square miles. "The problems of flood control presented by the Yellow River are the greatest that confront river engineers of this age," said Mr. A. M. Shaw, formerly Consulting Engineer to the Chinese Government. The silt load in some of the main feeders on occasions has been found to be as much as 40 to 45 per cent by weight with an average silt load for the lower river of about ten per cent. It has been estimated that 1,200 million tons of silt must be on the average annually transported by the Yellow River to the sea, and about 43 million cubic yards of silt are deposited each year in its channel, raising its bed from 4-ft. to 5-ft. each century. During the period since 2278 B.C. to this day, over which authentic records are available, the Yellow River has changed its course to the sea fifteen times, through the failure of a dyke and the deposit of silt in the river bed. In recent years there was formed a new river, 400 miles in length, from one half mile to 50 miles in width, which entered the sea hundreds of miles south of its former mouth. This change, of course, on the part of the river submerged farms and villages, swallowing up rich agricultural land which had sustained 500 people to the square mile. It was stated by a competent engineer that 2,000 dollars (silver) would have prevented this disaster, but the cost of repairing the breach was estimated at five million dollars.

Yellow River Migrations

At one time the river ran north by Tientsin, and at another it emptied in Central China into the Yangtze, near Chekiang, hundreds of miles to the south, as it threatens to do again. It now enters the ocean 600 miles up the coast from a former mouth. The average flow is about 300,000 cusecs; the maximum flood discharge is about 500,000 cusecs, but in the 1933 floods it reached 750,000 cusecs. The average velocity is about 8-ft. per second, and the maximum surface velocity is about 10-ft. per second. When the velocity of flow falls below 3-ft. per second, deposition of silt is rapid and the rising floods overtop the existing dykes and a new page of sorrow is opened. This silt is so fine that 98 per cent of the grains in tested samples were less than 1/1,000 inch in diameter, and some were as small as 1/10,000 of an inch. It is rapidly picked up when velocities exceed 3-ft. per second.

The old Chinese tradition was that restless dragons stirred the mud in the rivers, creating frequent calamities. Even in recent years foreign engineers have had their work of construction delayed in rural districts while rites to propitiate the river dragons were carried out. The boats on many of the rivers of China, and the junks on the coast, have eyes in order that they may see. It is not easy to eliminate superstition in peasant and seafaring communities in China. In some places the old bronze cows still remain to watch over the unruly waters.

With eighteen years of practical experience on river conservancy works in China Major O. J. Todd said (1935): "China can be saved the losses and horrors of these repeated Yellow River floods if she wills it. The work should go forward with the same technical skill that America is using on a dozen major projects, each of which is more costly than this." A committee of engineers, backed by a stable and efficient government, and with ample financial resources, could spend hundreds of millions of pounds sterling on water control in China, with results that would amply justify the expenditure. Some idea of the magnitude of the work connected with the Yellow River may be gained from the statement that a conservancy scheme planned for a tributary, the Fen Ho, was estimated to cost 12.8 million dollars (silver), of which about eight million dollars was for flood control and the remainder for irrigation, involving the use of pumping plants. The total annual benefit to be derived from that expenditure was given as 5,600,000 dollars.



SECTION THROUGH DYKE ON YELLOW RIVER

A loan of 12½ million dollars (Chinese currency) was made from the British Boxer Fund to finance the first part of a scheme to improve the Hwai River, which flows between the lower Yellow and Yangtze rivers. Its outlet to the sea was choked up by a Yellow River migration, and its diversion has adversely affected the Grand Canal and areas affected by its big overflow. The Hwai scheme is a typical example of large-scale hydraulic planning to solve not only the flood problem, but to provide a supply of water for irrigation, to increase navigation facilities and to reclaim large areas of waste land. More than 100,000 square miles will be affected by these improvements, which, when completed, will include work on the Grand Canal.

Chinese Dykes

The Chinese have always shown ingenuity, and in times of emergency have dealt with perils due to Nature's forces in a resourceful manner, but with primitive tools. To control the floods they have, through the centuries, depended mainly on enormous earthen dykes. These dykes have been sodded, where possible, to prevent erosion. Broad earth dykes are built on both sides of the river where no rocky slopes act as natural barriers. Willow trees, grown along the toe or in groves between the dyke and the channel, protect the dyke, but where practicable other protection is used where the current carries the stream in towards a concave bank.

Hundreds of miles of enormous dykes have been built up in many places in North China of unprotected loess soil, which, when attacked by the swirling waters of a flood, dissolves like sugar and a breach is made. The protection of this loess embankment is essential for permanent work.

The double dyke method is used in many places. The outer or "official dykes" are as much as five or eight miles apart, but local farmers frequently build inner or "people's dykes," as close as one mile apart. If the main dyke is overtopped, the area between the two dykes provides an extra channel in emergency and the land can be cultivated in normal times.

A general idea of the great volume of some of the earth dykes may be gained from the fact that the Yao Ti dyke (11.2 miles long) on the Yangtze (built in 150 days after the 1935 floods), involved the placing of more than nine million cubic yards of earth, or sufficient to build a dyke nearly 16-in. square around the earth at the equator. On another stretch of the Yangtze about 57 miles long, the main dykes were completely rebuilt by C.I.F.R.C. engineers in 1932 to a height of 1 m. above the flood marks of 1931. At the peak of the operations, 15,000 men were employed. A stone-protected dyke that reclaimed three towns and much good farming land that had been ravaged by the Yangtze for seven years was built by the C.I.F.R.C. engineers in 1925 at a cost of 50,000 dollars. At the next harvest the crops from the reclaimed land were valued at one million dollars, showing a return of 20 to 1 on costs of the work in the first year. After the 1924 floods in Hopei Province, similar results were obtained; dykes costing 50,000 dollars reclaimed land from which the first harvest yielded a return of 20 to 1 on the cost of the work.

The huge dykes and bank protection of the Yangtze and Yellow rivers, like the Grand Canal and the Great Wall, are colossal monuments of the human labor that was used in their construction. The thousands of miles of earth dykes built in China represent very many millions of man-power hours.

The ingenious Chinese have devised a unique method of dyke reinforcement. A cereal—kaoliang (millet)—grown in North China, has a long and thick stalk. These plants, with roots attached, are piled full length in great stacks along the dykes. Large quantities of hemp are twisted into ropes about 2-in. in diameter. Stakes and cross-bars from willow trees hold the work in place when fastened back by the ropes. Alternate layers of kaoliang stalks and soil are laid, each about 6-in. deep, with kaoliang roots facing the river. The layers are tramped down by hordes of people. That is a rough outline of a method often employed in the North. It is suited to hand labor, where wages work out at about 3d. a day, and where it is essential to provide employment when work on the land is impossible.

The New Methods

Engineers with long experience in China state that the stone-revetted dykes, used in many places in Shantung Province, give the best type of protection, but the difficulty is to obtain stone in many parts of the vast alluvial plains where the dykes are built. An innovation was the introduction of a pile driver to place a pile trestle across a new channel of the Yellow River for building a dam to turn the stream back into its old bed. Long heavy piles, four in a set or "bent," were driven in. The sets were spaced every 10-ft. across a gap 800-ft. wide. A light railway, placed on a trestle built on the deeply driven piles, brought stone from the banks and dumped it. More than 40,000 cubic yards of stone carried in 300 junks from more than 100 miles upstream went into this diversion dam. Mats, bags of earth, and kaoliang stalks were use to make the dam watertight. Some 25,000 men were at work. The C.I.F.R.C. financed 24 per cent of the scheme, which cost 1,500,000 dollars, and Shantung Province supplied the remainder.

Although an unlimited supply of cheap man-power is available near all the rivers of China, the modern dykes vary in construction, according to their situation and the materials available. After many failures to protect three large towns on the Yangtze, 300 miles below Hankow, by the old type of earthen dyke, 9,000-ft. long, a new method of dyke construction was employed. Sheet piling was driven 14-ft. deep through layers of sand and clay. Behind the sheet piling a ditch 10-ft. deep and 10-ft. wide was dug, 2,000-ft. in length. This ditch was filled in with carefully selected clay, tightly packed. This clay core was carried up through the center of the whole length of the dyke to a height of 3-ft. above maximum flood level. The dyke rose 25-ft. above the flats and was made 250-ft. wide at the base. A heavy layer of large stone or rip-rap protects the dyke against wave wash. It has stood as a monument of the efficiency of the design and supervision of the C.I.F.R.C. engineers.

Dykes will always be the main factor in the control of China's rivers. Improved methods of transport for materials, together with modern methods of construction and supervision by competent engineers, have made some of these important structures much more reliable. Although dredging has been used extensively on the Mississippi, and is practicable on certain stretches of the Yangtze, it does not find favor with engineers who have had experience with the Yellow River, but it has been used on other rivers in China.

World Records

The River Yangtze, 3,200 miles in length, is navigable for a longer distance than any other river in the world. With its tributaries, it drains an area of land about six times the total area of the British Isles; about 180 million people live in its basin. This river has produced the world's record for the volume of water carried in its channel, viz. 2,531,692 cusecs (Nanking, July 19, 1915). In 1915 the annual mean discharge was 1,050,000 cusecs. The corresponding record figures for the Mississippi, which has the highest record for world rivers other than those in China, are 1,617,000 and 225,000. The highest level recorded above zero for any water level in the world is held by the Yangtze which in 1871 attained the astonishing height of 275-ft. in the Wind Box Gorge, about 1,100 miles inland. The volume of solid matter in suspension carried annually past Hankow (600 miles up the river) is estimated at 5,000,000 cubic feet, 2,500 times the amount of silt that is carried past London Bridge. Such records must complicate the design of engineering schemes.

The primary cause of floods is heavy rainfall. All over China rains occur mostly in summer time, diminishing in intensity from the south, where on the coast it averages about 80-in., to the north-west, where the average is about 11-in., and even less in Mongolia. Typhoons cause intense and sudden precipitation, especially against mountain slopes. Torrents run off deforested hills like storm water off a roof, eroding the easily scoured soil, which, in North China especially, is very fine in texture mostly of wind-blown origin. It is this "loess" soil that chokes the rivers of North China, and is carried by the giant tributary, the Han, into the Yangtze at Hankow. For the six days, July 3 to 8, 1935, in Central China, the following records were taken:—At Wufeng, 25-in. of rain fell; at Ichang, on the Yangtze, 350 miles above Hankow, 30-in.; and at Chushan, on the Upper Han, 24-in. It was estimated that 14 cubic miles of rain fell on the basin of the Han in those five days (one tributary of the Yangtze).

In 1931 an immense new lake, 130 miles long and 70 miles wide, was formed with Hankow at its lower end. The Han brought into the Yangtze 1,060,000 cusecs, as compared with 812,000 cusecs maximum discharge of the Yellow River. This peak flow of the Han lasted two days; the maximum flow of the Yangtze past Hankow, including that from the Han, was 2,365,000 cusecs.

The floods along the Yangtze often have brought disaster to a population running into millions, but they are soon forgotten by the outside world. The factor of safety of many of the dykes is low. Thousands of men, women, and children repair breaks when the waters have fallen—on one dyke 50,000 people were at work in April, 1927, nearly every one carrying earth in baskets at each end of a pole. It would take a volume to describe in full the story of the Yangtze "dragons," but even if they will never be exterminated they will certainly be tamed by applied science in the not distant future.

Finally, there is the river system in the south-east, converging into the river that flows past Canton. The waters debouch into the ocean through the mouths of a delta, one channel bringing inland commerce from Canton to the port of Hongkong. During floods in 1915 the river at Wuchow, South China, rose 61-ft. above lowest water mark. At the highest stage 2,100,000 cusecs passed Wuchow, as compared with the record of 1,617,000 cusecs for the Mississippi. These rivers fertilize, and are arteries of commerce for a semi-tropical area in South China, larger than Britain, and densely populated. Floods are less frequent than in North and Central China, but there is rapid erosion. Droughts are unusual; irrigation and transport are the main water control problems in South China.

The Canals of China

The rivers and canals are the highways of commerce, but enormous volumes of silt brought down from the hills and river banks are deposited in the river beds, canals, and harbors, in addition to vast quantities carried each year into the sea. Many of the canals require extensive dredging and more efficient protection against floods. Certain experts state that dykes, even if aided by detention basins, cannot prevent future floods from some of the rivers which carry such a heavy mud load. They say that the source of the trouble must be dealt with, and that soil erosion in the hills must be prevented. That is more easily said than done, for the urge for food and fuel has led to great deforestation. Even the almost barren hillsides are cultivated in places. But the Yellow River Commission has tackled the problem by setting up a field laboratory to experiment in various methods of soil erosion control. It will take many decades for practical results to be obtained from that angle. Meantime, engineers have urged improvements in dyke construction and the building of detention reservoirs to iron out and detain, if only for a few hours, the highest crest floods. The scheme presents many attractive possibilities, such as the production of electrical energy, irrigation of land, etc., as well as flood control. But a closer examination reveals certain fallacies. Flood prevention reservoirs must be kept empty for emergencies, but reservoirs used for power production and irrigation demand exactly opposite conditions. There is a difference between detention and storage of water. Neither power production nor irrigation could be operated on the erratic supply provided by the floods of many of China's rivers.

There are other problems as yet unsolved. What is the increase in the power of erosion of the river bed due to clarification of the water as a result of detention? The Islam Weir of the Sutlej Valley project in India collapsed in 1929. It was one of four division dams for that huge irrigation project. The flow passing the dam having been partly relieved of its load, picked up material from the river bed below the dam, and so deepened the channel. The river downstream dropped so much that a large portion of the downstream apron was destroyed.

The general arguments for and against the use of detention reservoirs are well known to readers of this journal. The enormous volume and fineness of the silt in many of the rivers of China greatly complicates the problem of any system of detention; the cost of such works would, as a general rule, be prohibitive. Building detention reservoirs in the upper course of silt-laden streams that finally flow past Tientsin is, however, said to be the only practical solution of the problem of providing a navigable waterway for that port.

Lakes as Detention Reservoirs

The Yellow River carries a great load of silt of a unique type, which, combined with the topography of the land, makes the value of detention reservoirs in the lower valley doubtful, but the short duration of the floods seems to favor their use in the upper reaches. Mr. E. W. Lane, an American expert concerned with the Boulder Dam, and possessing considerable knowledge of China's rivers, writes: "A river may be induced to excavate its own channel by constructing a reservoir upstream to remove the transported solids.

(Continued on page 396)

Japan's Foreign Trade Outlook*

JAPAN'S 1937 foreign trade is the story of governmental attempts at planning commercial economy by statute. Trade was dominated by laws, rumors of laws, uncertainty as to the application of laws—and by the China incident.

The Government was given power to say what articles could be imported and what exported and how much, and what could be done with them after they entered the country. Import associations, under Government control, were given power to say (within limits) how much of this importing should be done by each firm in the importing group, what countries imports should be from and how much of the goods should be taken from each country (or to apply Government regulations governing these items). Export associations, with the same powers over exports and with the same Government supervision, were strengthened.

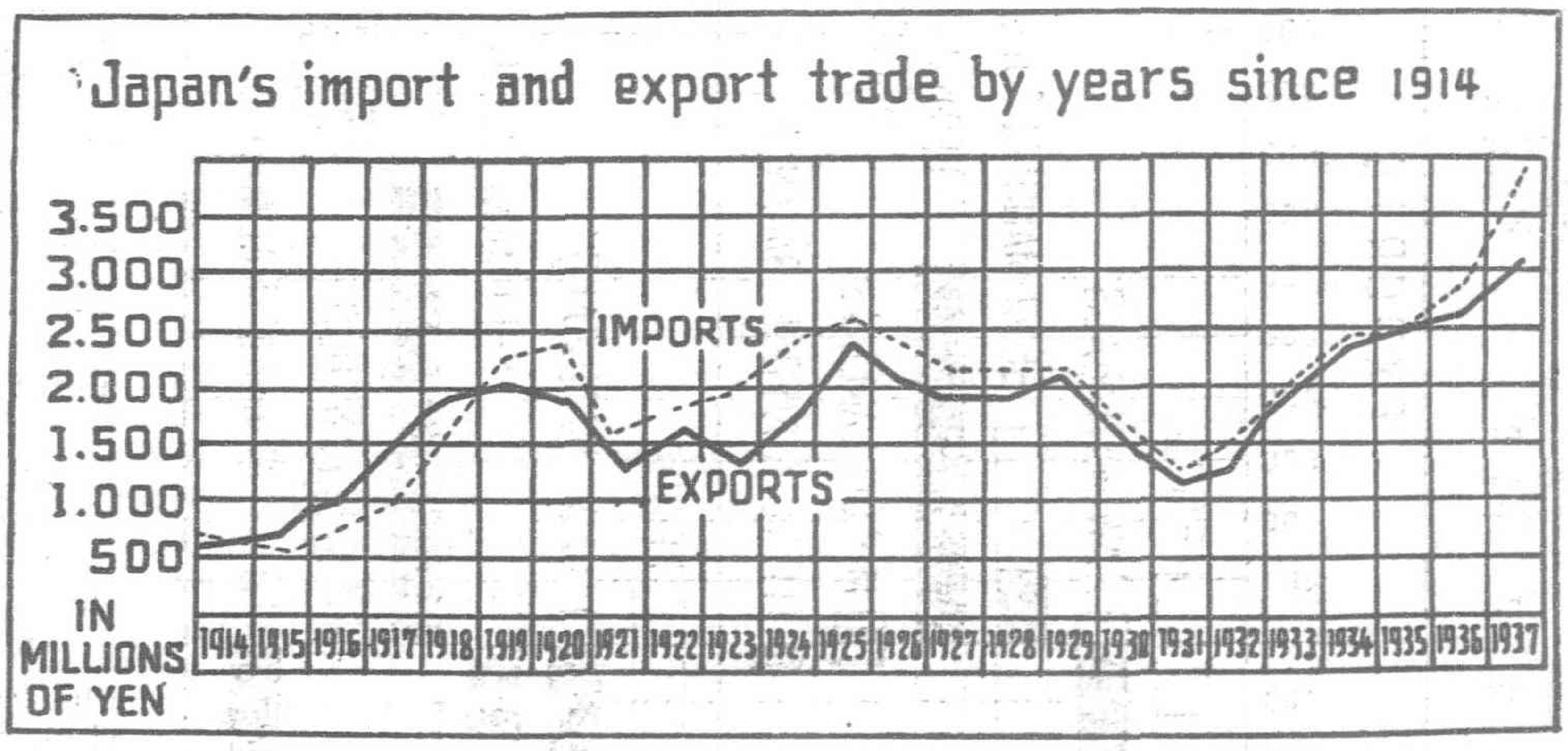
Treaties weie made with India, the Netherlands Indies and Australia, and the Government is seeking similar accords with Germany and Italy, specifying what goods and how much shall be exported to and imported from those regions.

The Government is setting up trade offices, responsible to it, in some 15 leading trade centers throughout the world and planning more.

Substitutes Required

The State is rationing the domestic use of some goods and ruling that certain imports (or goods the major part of which is imported) be mixed with locally produced goods at definite percentages before being sold. Gasoline must eventually be mixed (with 10 per cent of alcohol, cotton and wool with from 20 to 30 per cent of staple fiber).

To these definite regulations are added the usual ways in which governments influence imports: the lowering or abolishing of tariffs or surtaxes on needed materials; the offering of subsidies for the use, production or discovery of substitutes for import goods; the prevention of expansion of industries dependent on large supplies of import goods and the manipulation of the exchange.


Japan's import and export trade by years since 1914

Japan has done these things because it has been faced with an unfavorable balance of trade for 19 years, excepting the year 1935, with a total adverse balance of more than four billion yen (or an average of Y. 230 millions a year for 19 years). This has necessitated steady exports of gold.

But this is not all.

Japan this year, next year and for many years to come has a need for yet more imports of large quantities of iron, steel and other raw material to build up its heavy industry and prevent the large profit-consuming drain of capital abroad for machines. This has made the trade balance outlook still more gloomy.

Then the incident brought with it the need for large imports of munitions, oil and gasoline for the fighting, various raw materials such as lead, zinc and copper for the munitions and general war industries and leather for soldiers' shoes. Japan's industry also had to divert much normal export material to incident needs.

At the same time, foreign restrictions against Japanese goods, culmination of foreign fears of encroachment on home markets by the cheaply produced Japanese goods, boycotts and lost markets (temporarily at least) caused by the fighting and its repercussions, made the export picture none too bright.

So Japan attempted to meet this with legislation. Not ordinary restrictive legislation, but legislation which verges on planned economy.

Reports are that Mr. Seihin Ikeda, newly appointed (May, 1938) Finance Minister and concurrently Commerce and Industry Minister, plans yet more strict guidance of the finance and trade of Japan, the combination of the two portfolios in the hands of one man being interpreted as intended (among other things) to bring the foreign trade of Japan more closely into a system of controlled economy.

Significance

The results will in some measure show whether a government can, by legislation and regulation, prevent an unduly high unfavorable balance of trade without disrupting the economy of the country.

This seems significant at a time when Germany, Italy and the Soviet Union are feverishly attempting the same thing and when the United States and England are dallying with thoughts of planned economy.

Indications from the first five months of 1938 are that changes or modifications in the legislation or its application may be made. Restricted imports are resulting in export drops, though the higher prices which are the direct cause of these declines may be due to higher basic prices resulting from the incident-started higher costs as well as to higher prices resulting from import scarcity.

The treaty with India in part has been nullified by the rise in prices of Japanese goods, that with Australia by restrictions on the use of wool and that with the Netherlands Indies by difficulties in carrying out the working arrangements (the last has later been modified).

Empowered import associations—a new venture and therefore effective in 1937 only through indirection—will show increasing effects in the course of years.

Net result was that many of the influences produced indecisive, indirect effects which resulted in insecurity to both exporters and importers.

It should be remembered that few of the usual reasons for government restriction were present to any significant extent. The tariffs to protect infant industries, uphold the standard of living, promote self-sufficiency and acquire additional revenue are, for the most part, absent from the picture.

The regulations in general are simply to keep down the unfavorable trade balance in order that Japan may have enough money to pay its bills. They were brought on because there are many goods—such as industrial supplies and war materials—which Japan thinks it necessary for the industrial welfare to buy, and because these goods must, in large measure, be bought abroad.

Import Trade

Rumors of the import restriction law dominated the import trade of the first half of 1937 as thoroughly as the incident dominated the last half.

During the first six months the impending import regulations induced Japanese traders, especially textile men, to import and lay up large quantities of raw cotton, wool and pulp—action which shadowed the whole import picture. Laying up of military stores for an emergency, of materials for the expansion of textile and other plants and for the stress on basic or heavy industries brought the machinery imports to 50 per cent greater than for the past several years and induced an increase in imports of iron, steel, miscellaneous metals, crude rubber and crude oil.

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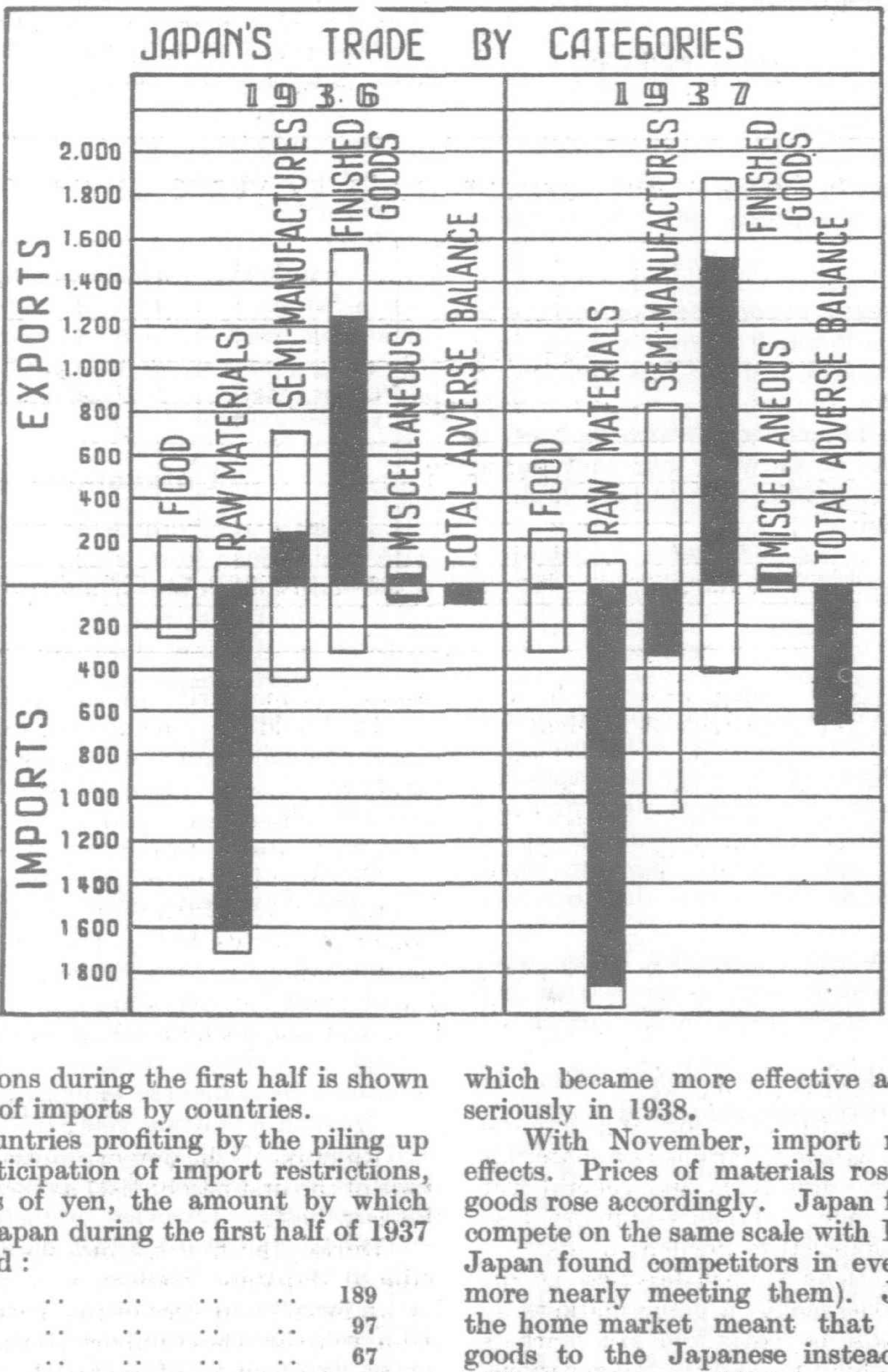
* From the *Japan Advertiser's Annual Review*.

In the second half of the year, imports featured articles needed by the war industries: mineral ores, chemicals, metals, oils and machinery. Woodpulp, for the rayon and staple fiber industries, was the only exception.

Import Emphasis

These two trends are distinguishable in the following table, which shows import increases compared with 1936 in millions of yen:

	Year	*1st half*	*2nd half*
Iron, other metals, miscellaneous minor raw materials for further processing	541	218	322
Mineral oil, machineries, miscellaneous minor finished goods..	128	59	69
Crude, heavy oil, mineral ores, miscellaneous minor raw materials ..	108	28	80
Wool	84	91	— 7
Paper-making pulp	50	18	32
Crude rubber	26	41	— 15
Hides and skins	20	8	12
Beans and peas	10	12	— 2
Oil cake	9	6	3
Lumber	9	0	9
Phosphorite	8	0	8
Raw cotton	1	178	—178



Anticipation of import restrictions throughout the first half, with heavy purchases of industrial raw materials, emphasized during this period the import trade with agricultural countries.

In the second half, the material needs of the war industries shifted the import emphasis to the highly developed industrial countries.

Regional Emphasis

This is made clear by the following tables, which show import increase compared with 1936, in millions of yen.

The first table lists the continents which bore the import emphasis in the first six months:

	1st half increase	*2nd half increase*
Asia	247	—12
Africa	105	— 7
South America ..	43	7

The second table lists the continents in which the import emphasis lay in the second six months:

	1st half increase	*2nd half increase*
North America ..	189	233
Europe	72	101
Oceania	— 15	27

Emphasis on agricultural regions during the first half is shown even more thoroughly by a study of imports by countries.

The following table shows countries profiting by the piling up of industrial raw materials in anticipation of import restrictions, the figures indicating, in millions of yen, the amount by which the exports of these countries to Japan during the first half of 1937 exceeded those of the 1936 period:

United States	189
British India	97
Union of South Africa	67
Straits Settlements	40
China	37
Egypt	34
New Zealand	25
Manchoukuo, Kwantung	25

Principal country to profit by the second period expansion of war industries was the United States, whose exports to Japan during that period advanced Y.234 millions, although cotton imports dropped some Y.100 millions because of the heavy imports of the first half. This increase of more than a third of a billion yen (234 plus 100) centered in war materials not itemized in the Government's reports on foreign trade.

Countries profiting by the war industry expansion are shown below, the figures indicating, in millions of yen, the amount by which the exports of these countries to Japan during the second half of 1937 exceeded those of the 1936 period:

United States	233
Germany	41
Manchoukuo, Kwantung	30
Australia	24
Canada	21
Netherlands Indies	20
Belgo-Luxemburg	17
Brazil	16
Sweden	14
Great Britain	14

Export Trade

The export trade, favored by early moves toward treaties, a fairly friendly international situation (which had quieted down since the Manchurian incident), higher prices on the world market and Government-aided trade expansion, showed a healthy gain over 1936—until the last of October. The leveling off, however, began with the North China fighting in mid-year.

The incident meant an instant drop in trade with China. A further export reduction, especially in such lines as metal goods, wire netting and chemical goods was due to a pure shortage in Japan resulting from the higher local wartime need for these goods or the materials from which they come.

Scarcity of ship bottoms due to the incident meant that shipping costs rose by leaps and bounds. The higher freight rates, which add to the sale price of the goods and which grows proportionately with the distance, reduced Japan's price advantage more and more, especially outside the Asiatic markets.

The diversion of factories to wartime production, the restriction on factory enlargement and the resulting restriction of output were other factors which became more effective as time went on, continuing more seriously in 1938.

With November, import restrictions began to show their effects. Prices of materials rose significantly. Prices of finished goods rose accordingly. Japan found it more and more difficult to compete on the same scale with Indian and British cotton products. Japan found competitors in every country meeting its prices (or more nearly meeting them). Japan found that rising prices in the home market meant that manufacturers were selling their goods to the Japanese instead of to the foreigner. To these difficulties was added a series of boycotts, which, though undoubtedly ineffective as a sales preventive in themselves, added their weight toward favoring the goods of other countries, a trend perhaps made effective when coupled with the rising prices of Japan's goods.

Miscellaneous causes were significant: the United States bought Y.46 millions less silk in the second half of 1937 than in the same period of 1936. This has been credited variously: to the trade recession, the rapid increase in rayon production and the boycott movement.

Manufactured goods accounted for more than two-thirds of the almost half-billion-yen gain in Japan's export trade. Cotton textiles alone represented 17 per cent of the increase, machineries and iron manufactures another eight per cent. Cotton and rayon cloth gains were solely price increases, caused largely by the high price of raw materials.

Export Gains

The largest export gains during 1937 are shown in the following table, in millions of yen:

	Year	*1st half*	*2nd half*
Cotton textiles	89	40	49
Machineries, parts	28	24	4
Cotton yarn	17	4	13
Canned, bottled provisions	16	11	5
Rayon yarn	15	4	11
Raw silk	14	37	−23
Iron manufactures	14	8	6
Wheat flour	13	− 4	17

Advances in shipments to the following countries contributed greatly to the above increased sales, figures in parentheses showing gains, in millions of yen, as compared with 1936:

Cotton textiles, Netherlands Indies (30), Argentina (14), Manchoukuo-Kwantung (11), U.S.A. (9)
Machineries, parts, Manchoukuo-Kwantung (14), China (7)
Cotton yarn, Netherlands Indies (8)
Canned, bottled provisions, United States (7)
Rayon yarn, British India (14), Mexico (4)
Raw silk, England (8), British India (5), France (4)
Iron manufactures, Manchoukuo-Kwantung (6), Netherlands Indies (4)
Wheat flour, China (15)

With some two-thirds of the year's export increase coming in the first half of 1937 and a leveling off which became a sheer drop in November and December, a comparison of the first and second half-year periods becomes significant.

The following table is a list of the countries which took much less of Japan's goods in the last half of the year than they did in the first half. Figures indicate increases (or decreases) in millions of yen over the same period of 1936.

	1st half	*2nd half*
United States	92	−46
North China	58	−38
Hongkong	9	−18
Netherlands Indies	57	+14

The drop in exports to North China and Hongkong (much of Hongkong's imports is for South China) is directly attributable to the present incident. However, signs of recovery are apparent in recent trade returns with the North China region. The first-half increases to the United States were due, in large measure, to cotton cloth and raw silk gains (in price, not volume); those to North China, Hongkong and the Netherlands Indies were due to cotton cloth and machineries gains.

On the other hand, there were some countries whose trade imports from Japan gained significantly during the second half of the year as a whole (despite the trade break in November and December).

These are indicated in the following table, which shows increases, in millions of yen, over the corresponding period of 1936:

	1st 6 months	*2nd 6 months*
Manchoukuo and Kwantung	37	77
British India, Ceylon	3	42
Argentina	4	16
England	6	15
Straits Settlements, British Malaya	− 4	14
Australia	−11	14

Resume

The total trade resume shows that among six continents and 39 countries and regions there were seven countries and one region to which exports from Japan during the second half receded as compared with the previous year, the combined loss of trade being Y.114 millions. The remaining 31 countries imported more from Japan in the second half of 1937 than in the corresponding period of the previous year, the combined improvement being Y.287 millions. The balance of Y.173 millions represents the net increase of exports.

The following countries showed the largest gains in imports from Japan in 1937 as compared with 1936. The figures show increases in millions of yen:

Manchoukuo and Kwantung	115
Netherlands East Indies	71
United States	45
British India, Ceylon	45
North China	20
England	20
Argentina	20

Japan's favorable trade balances can be listed in three categories. Most in Japan's favor is the trade with the controlled territories, Manchoukuo and Kwantung. Favorable trade balances are naturally high with industrially undeveloped regions: Central Asia, Central America and the bulk of Africa. In the third catagory are trade balances with independent nations (excepting Manchoukuo). Here Japan's trade balance with Great Britain is more favorable to Japan than the balance between Japan and any other country. No other country even approaches in value.

These points are supported by the following two tables.

The first indicates the principal countries or regions with which Japan had a favorable balance of trade in 1937, the figures being the favorable balance, in millions of yen.

Manchoukuo, Kwantung	318
Great Britain	62
Netherlands Indies	47
Hongkong	44
Siam	35

The following table names the principal areas with which Japan had a favorable balance of trade in the same year, figures again indicating the favorable balance in millions of yen:

Africa (except Egypt, Union of South Africa)	113
Central Asia (Iran, Iraq and neighboring countries)	52
Central America	36

Unfavorable Trade Balances

Japan's unfavorable balance of trade shows up most clearly with the nations from which its wool, cotton, machinery, oil, iron, wood pulp and rubber come.

Principal countries with which Japan had an adverse balance of trade in 1937 are shown in the following table, which indicates the unfavorable balances, in millions of yen:

United States	−630
British India, Ceylon	−135
Germany	−133
Australia	− 93
Canada	− 85
Brazil	− 46
Straits Settlements, British Malaya	− 44
Egypt	− 41
Sweden	− 38
Union of South Africa	− 35

The unfavorable trade balance with Brazil is partially offset by the fact that a portion of the Brazilian goods sent here are produced by Japanese emigrants.

In such a shifting year, trade balances were changed violently and rapidly. The season showed the largest increase in favorable balance with Manchoukuo because of the industrial expansion in that country. Likewise, industrial expansion in China and an increasing market for cotton cloth in that region, accounted for the gain in favorable balance.

Increases in favorable trade balance were registered during 1937 with the following countries, the gains as compared with 1936 being shown in millions of yen:

Manchoukuo and Kwantung	55
China	31
Netherlands Indies	31
Australia	20

Increases in trade balances unfavorable to Japan were noticeable. The most startling was that with the United States, which jumped by more than a third of a billion yen. Several of the other large jumps were also due to imports of war supplies, though several more were due to increasing restrictions on Japanese goods, directly or indirectly,—those with Egypt and the Union of South Africa, for example.

The following table shows the principal countries with which Japan's trade in 1937 became more unfavorable, the figures indicating the decrease in favorability (to Japan) as compared with 1936, in millions of yen :

United States	−377
Germany	− 53
British India, Ceylon	− 34
Egypt	− 37
Canada	− 26
Straits Settlements	− 25
New Zealand	− 24
Sweden	− 23
Uruguay	− 22
Belgo-Luxemberg	− 20
Union of South Africa	− 54

Negotiations

Negotiations to remedy the unfavorable balance with Germany were expected to be revived on the return of the newly appointed German Ambassador to Japan, Major-General Eugen Ott, to Berlin in May of 1938. If an agreement is worked out, it is likely to be triangular, with Japan, Manchoukuo and Germany participating, as the Manchoukuo trade balance with Berlin is almost as favorable as that of Japan is unfavorable.

The Foreign Office also is seeking to open trade negotiations with the Union of South Africa for conclusion of a commercial treaty to reduce the triple customs tariff on imports from Japan as a non-treaty country. The tariff applies to about 40 per cent of Japan's export articles, including a large percentage of cotton and rayon cloth. Principal argument is expected to be the increase in Japan's purchase of South African wool.

A late report is that Japan may suspend importation of Egyptian raw cotton because of the recent rise in Egyptian tariff rates which are said to doom Japan's exports to that country. The Government is negotiating for a change in policy.

Another move to boost exports with a minimum increase in imports was inaugurated by Finance-Commerce and Industry Minister Seinhin Ikeda in June, 1938. Beginning with the cotton industry, he set up a scheme for permitting imports of raw cotton against shipments of textiles.

*EXPORTS AND IMPORTS BY COUNTRIES

(In Y.1,000)

	Exports				*Imports*				
	Second half 1937	*Increase (decrease) over 1936*	*First half 1937*	*Increase (decrease) over 1936*	*Second half 1937*	*Increase (decrease) over 1936*	*First half 1937*	*Increase (decrease) over 1936*	*Balance +excess exports −excess imports*
ASIA	821,261	+ 89,148	824,654	+185,797	496,359	− 12,033	798,755	+246,958	+350,801
Manchoukuo	124,265	+ 41,785	91,827	+ 23,448	108,555	+ 25,952	140,516	+ 17,552	− 32,979
Kwantung Prov.	216,357	+ 35,554	179,559	+ 13,197	21,613	+ 4,125	23,585	+ 7,225	+350,718
China	54,253	− 37,973	124,997	+ 57,532	40,278	− 48,402	103,358	+ 37,200	+ 36,614
Hongkong	14,218	− 18,625	34,932	+ 9,330	2,494	+ 902	2,838	+ 1,148	+ 43,818
Philippines	30,731	+ 5,391	29,617	+ 3,117	20,565	+ 610	24,629	+ 8,317	+ 15,154
French Indo-China	2,052	− 366	2,572	+ 293	11,600	+ 1,031	15,410	+ 5,827	− 22,386
Siam	21,235	+ 586	28,147	+ 5,768	8,322	+ 1,206	5,249	+ 3,608	+ 35,811
The Straits Settlements ; British Malaya	29,230	− 4,226	42,069	+ 14,314	45,448	− 4,447	70,143	+ 39,738	− 44,292
British Borneo	571	+ 329	470	+ 176	9,669	+ 1,233	9,107	+ 1,790	− 17,735
Dutch East-Indies	84,782	+ 14,039	115,268	+ 56,516	73,393	+ 19,875	80,057	+ 20,029	+ 46,600
British India and Ceylon	188,520	+ 41,713	129,502	+ 3,361	142,289	− 17,699	311,274	+ 96,630	−135,541
Iran, Iraq and other Central Asiatic countries	38,252	+ 8,561	34,585	+ 4,828	9,990	+ 5,534	10,699	+ 9,388	+ 52,148
Asiatic Russia	14,397	+ 4,444	9,454	− 3,582	2,062	− 2,029	1,841	− 876	+ 19,948
Other	2,399	− 2,061	1,654	− 2,499	79	+ 73	50	− 618	+ 3,924
NORTH AMERICA	313,625	− 45,349	345,976	+ 96,093	694,476	+254,137	679,776	+199,368	−714,651
The United States	302,896	− 46,925	336,532	+ 92,102	634,275	+233,535	635,267	+188,554	−630,114
Canada	10,633	+ 1,508	9,403	+ 3,974	60,191	+ 20,681	44,501	+ 10,832	− 84,656
Other	96	+ 70	41	+ 16	10	− 78	9	− 17	+ 119
CENTRAL AMERICA	28,783	+ 4,380	26,102	+ 9,264	5,167	− 7,164	10,598	+ 4,138	+ 36,120
Mexico	7,428	+ 3,884	6,194	+ 2,548	3,597	− 7,195	10,665	+ 2,777	− 640
Other	21,355	+ 496	19,908	+ 6,716	1,570	+ 31	2,933	+ 1,361	+ 36,760
SOUTH AMERICA	71,621	+ 35,234	37,898	+ 5,524	88,731	+ 7,231	73,880	+ 43,190	+ 53,092
Chile	7,359	+ 4,097	3,383	− 781	7,018	+ 3,267	7,701	+ 1,499	− 3,977
Argentine	27,486	+ 15,510	14,995	+ 4,259	14,556	− 4,405	27,462	+ 16,075	+ 463
Brazil	11,314	+ 6,271	5,991	+ 2,194	58,443	+ 15,990	4,367	− 532	− 45,505
Other	25,462	+ 9,356	13,529	− 148	8,714	− 7,981	34,350	+ 26,148	− 4,073
OCEANIA	66,142	+ 14,343	40,321	+ 5,607	48,944	+ 26,531	173,185	− 14,900	−115,666
Australia	47,641	+ 14,328	24,439	− 11,011	37,920	+ 23,511	127,332	− 40,174	− 93,172
New Zealand	10,886	− 229	8,470	+ 2,845	6,419	+ 1,669	42,214	+ 24,991	− 29,277
Other	7,615	+ 244	7,412	+ 2,559	4,605	+ 1,351	3,639	+ 283	+ 6,783
AFRICA	142,633	+ 36,148	100,103	+ 8,885	50,284	− 6,838	156,021	+105,000	+ 36,431
Egypt	17,051	− 3,656	15,721	− 4,479	17,598	− 5,205	56,520	+ 33,586	− 41,346
Union of South Africa	31,537	+ 7,510	22,212	+ 4,705	16,762	− 360	72,090	+ 66,651	− 35,103
Other	94,045	+ 32,294	62,170	+ 8,659	15,924	− 1,273	27,411	+ 4,763	+112,880
EUROPE	203,234	+ 38,387	152,721	+ 9,850	353,296	+101,535	250,705	+ 72,343	−148,046
Great Britain	99,348	+ 14,988	68,606	+ 5,657	48,217	+ 14,239	57,541	+ 18,577	+ 62,196
France	26,621	+ 2,845	20,587	+ 888	14,858	+ 4,673	13,027	+ 3,314	+ 19,323
Germany	22,603	+ 4,904	20,658	+ 3,292	86,818	+ 41,100	89,559	+ 19,777	−133,116
Italy	3,842	+ 1,864	3,269	+ 779	2,247	+ 93	2,169	+ 557	+ 2,695
Switzerland	1,599	+ 1,013	550	+ 297	9,492	+ 3,124	9,747	+ 2,115	− 17,090
Belgo-Luxemburg	10,765	+ 3,349	9,885	+ 1,071	24,553	+ 16,780	16,506	+ 8,260	− 20,409
Holland	10,057	+ 3,266	8,383	− 211	3,364	+ 997	3,666	+ 1,477	+ 11,410
Sweden	6,201	+ 1,675	5,344	+ 1,049	25,537	+ 13,855	23,740	+ 12,313	− 37,732
Norway	4,248	+ 966	4,653	+ 1,763	12,974	+ 3,132	11,059	+ 3,048	− 15,132
Other	17,950	+ 3,517	10,786	− 4,735	25,236	+ 3,542	23,691	+ 2,905	− 20,191
OTHER	343	+ 343	—	—	—	—	—	—	—
TOTAL INCLUDING OTHERS	1,647,642	+172,634	1,527,776	+309,808	1,637,257	+363,398	2,145,920	+656,098	−607,759

* From the *Oriental Economist*.

North China's Resources

Resource investigations in China until a few years ago brought only vague results, which would scarcely convince the intelligent section of the public, but in recent years, largely due to the awakening of the Chinese intelligentsia, reliable results have been obtained, says the *Voice of New China*, published in Shanghai. Mainly based on the results of those investigations, in the following is attempted a general survey of the chief agricultural, forestry, aquatic, and mineral resources found in the five North China Provinces.

First, agricultural resources. China, as is well known, for ages past has been an agricultural country, and this is well attested by the fact that 80 per cent of its entire population comprises farmers. Thus it will be readily seen that most of China's products are also agricultural. But the Chinese management of agricultural work is yet very crude and many Chinese farmers still continue their primitive methods. Yet, the greatest cause of this hitch in China's agricultural exploitation work is obviously political and social unrest. In fact, for years past, until quite recently, the agrarian population of China in particular has suffered heavily from the grabbing of military cliques. The worst of the matter is that during the last century the whole of China practically has been converted into a quasi-colony of foreign Powers, due to the latters' capital investments. All these factors have sadly hampered the progress and development of Chinese agriculture. Of the five North China Provinces, Hopei and Shantung perhaps are to be counted among the most promising agricultural areas, but the existing agricultural conditions there practically show no improvement over the other areas.

Arable Land Extensive

As to the area of arable land in North China, more than 90 per cent is occupied by farms. The total arable land in the five North China Provinces is about 310,132,000 se (one se is equivalent to the Japanese 180 tsubo). This represents about one-third of the total arable land in all China, which is approximately 1,000,000,000 se. The number of farm houses in the five North China Provinces is 12,575,000 as against the 54,925,000 of the whole of China:

ARABLE LAND

	(*A*)	(*B*)	(*C*)
Hopei	103,432	4,232	24 se
Shantung	110,662	5,918	19 se
Shansi	69,560	1,874	32 se
Chahar	16,832	309	54 se
Suiyuan	18,639	249	75 se

NOTE:—(*a*) Arable land (in 1,000 se); (*b*) Farm houses (in 1,000); (*c*) Arable per house.

The chief agricultural products of North China are rice, wheat, barley, kaoliang, millet, corn, soya beans. cotton, tobacco and peanuts. The total output of rice, in the five North China Provinces, according to statistics obtained in 1933, was 241,568,000 lbs., while that of wheat in the same year was 11,246,000,000 lbs. This is 29 per cent of the total yield of all China. Kaoliang, together with wheat, millet and soya beans, is the most important staple food for the agrarian population in China, and the annual yield of this cereal in the five North China Provinces aggregates 8,000,000,000 lbs., which represents 56 per cent of the total yield in all China, statistics indicate. Millet in China is produced chiefly in the North China area, the annual output registering the huge amount of 10,174,000,000 lbs., which represents two-thirds of the total of production in all China. In the production of soya beans, Manchoukuo of course ranks first in the world, but production in North China is nonetheless considerable. The annual production of soya beans in the five North China Provinces totals about 5,000,000,000 lbs., which means production to the extent of 34 per cent as against the gross total for the whole of China. Particularly in the single province of Shantung, as much as 24 per cent of the gross total for the whole of China is produced.

Cotton Most Important

Cotton is the most significant to Japan of all the agricultural products of North China, indicating a possible key to solution of the raw material supply question for Japan's cotton spinning and cotton textile industries. Cultivation of cotton is most suited to North China, particularly to Hopei, Shantung and Shansi, for climatic and other natural reasons. In this respect the whole of North China is believed to be far superior to Manchoukuo. This fact is best proved by the existing state in which we find 60 per cent of the total of production of cotton in all China concentrated in the North China Provinces. The only defect of North China cotton, in its present state, is its inferior quality. But every possibility is presented for improvement of quality, all depending on the efforts of cotton cultivators.

Next, forestry, live-stock and aquatic resources in North China. North China forests, as natural resources, are practically worthless. Before the ages marked by the Chin and Han dynasties the Chinese forests has been admirably kept up, but for a thousand and several hundred years since then the Chinese forests have been felled indiscriminately. Thus to-day practically all the Chinese mountains, to which access is easy are deforested and denuded. What about the live-stock resources of North China, then? In number and variety, the live-stock of North China are fairly important. Besides the ordinary kinds of live-stock, which include cattle, sheep, swine, and horses, there are found in great numbers asses, mules and camels. Especially for inhabitants outside the great wall, live-stock raising constitutes the chief means for obtaining a livelihood. According to the Annual Economic Report of the Republic of China for 1933, the live-stock in the three North China Provinces of Hopei, Shantung and Shansi were as follows:

	Totals for the three provinces (in, 10,000 head)	*Percentage against all China* (%)
Cattle	2,099	11
Sheep	3,484	11
Swine	16,616	21
Horses	624	43
Mules	2,947	50

Of the aquatic products of North China, especially important is salt. Not only sea salt, but also lake, well and rock salt are to be obtained in enormous amounts. In Shantung and Hopei, sea salt is produced, while Shansi and Chahar produce lake salt. According to the China Economic Year Book, the annual output of salt in Hopei in 1931 amounted to 4,000,000 koku, that in Shantung to 2,500,000 koku, and the same in Shansi to 1,600,000 koku.

The most important mineral resources in North China are coal and iron. True, gold, silver, copper, lead and zinc also are to be found, but according to investigations thus far made, the mining prospects of those ores have been found not so bright.

Indeed, deposits of coal and iron ore still left unexploited in North China are believed to be enormous. Only an inconsiderable fraction of this enormous deposit is understood to have been mined thus far. Iron to-day is absolutely indispensable to Japan, from the viewpoint of strengthening national defense, and coal also has come to be far more highly valued in view of the new possibility of liquefying this substance, and also from national defense necessity. According to a report prepared by the Peking Geological Research Institute, the coal resources in North China are indicated as follows:

	Deposit amount (unit : million tons)	*Annual output in recent years (unit : 1,000 tons)*
Chahar	504	202
Suiyuan	476	57
Shansi	127,126	2,700
Hopei	3,071	7,739
Shantung	1,639	3,500

It is indicated, rather authoritatively, that the total deposit of coal in all reaches 233,000,000,000 tons at the lowest estimate, while the same at the highest is computed at the enormous figure of 987,000,000,000 tons. If the above lowest estimate is taken as the standard calculation, approximately 60 per cent of the total deposit in all China is concentrated in the five North China Provinces. Further, of the five North China Provinces, Shansi alone boasts a deposit to the extent of one-half the total deposit of all China, for it is presumed that Shansi has coal amounting to 130,000,000,000 tons.

Coal Deposits Vast

The deposits of iron ore in all China, before the independence of Manchoukuo, was roughly put at about 1,000,000,000 tons. The state of distribution of iron ore, as in the case of coal, is again favorable to the northern part of China, but after the independence of Manchoukuo was declared, the total deposit in all China was decreased to 236,854,000 tons. From the standpoint of the utilization of resources in the future, this has proved a poignant blow to the Republic of China. The latest estimates of deposits of iron ore are as follows:

	Deposit Amount (Unit: 1,000 tons)	*Percentage*
Hopei	32,420	13.7
Shantung	13,700	5.6
Chahar	91,654	38.9
Honan	1,019	0.4
Anhwei	10,818	8.4
Kiangsu	2,000	0.8
Hupei	46,640	19.7
Kwantung	4,000	1.7
Chekiang	7,154	3.0
Kiangsi and Other Provinces	18,454	7.8
Total	236,854	100.0

In the iron ore resources again, it will be seen that 50 per cent of the total deposit in all China is located in the three North China Provinces, as indicated above. Speaking from the standpoint of the quality of iron ore, that produced in North China is found to be inferior to that produced in Central and South China.

Foreign Capital and Interests

The Imperialistic activities of the Powers in North China, as compared with those in South China, have been remarkably inferior. According to a certain foreign authority, the United States has invested 86 per cent of its total investments in China in Shanghai and Hongkong. England has made 66 per cent of its investments in South China and surrounding districts. In North China, therefore, Japan has enjoyed comparative superiority, but yet the total of its investments in this area represents only 34 per cent of the gross total of its investments in all China. But the appearance of Manchoukuo has necessitated a great revision of the figures obtained by the aforementioned foreign authority. Thus, in North China to-day, Japan's positive advance is clearly and markedly contrasted against the decline of the Imperialistic activities of other Powers.

England and France were the first to launch economic activities in North China. Though they have suffered much in this direction due to Japan's quick advance since the Manchurian Incident, they still retain first position among the Powers, with the exception of Japan. England has sought the foundation for its North China economic advance in banking institutions. Thus, as early as 1845 the East Asiatic Bank was inaugurated. This was followed by the establishment of the Hongkong and Shanghai Banking Corporation. It was in 1864 that the head office of this bank was opened. In 1885 its Peking branch office was opened, and in 1890 its Tientsin branch office. Ever since this banking institution has continued its activity, taking up all the British North China politico-economic management. Again, side by side with the Hongkong and Shanghai Banking Corporation, there has been established the Mercantile Bank, its head office having been opened to business in 1853 and its Tientsin branh office in 1896. Two other financial and industrial organs were established by the British for their North China economic activities, one in 1897 and the other in 1898. The present economic interests of the British in China have been established gradually, with the railway and mining interests constituting the most important of them.

British Interests Detailed

(1) British railway loans in North China:

(*a*) Tientsin-Pukow Railway, more than 1,000 kilometers. Amount of this railway loan is £8,000,000 (interest 5 per cent). Chief creditors are Great Britain and Germany, and of the total loan, £2,960,000 is Britain's share.

(*b*) Peking-Hankow Railway, 1,200 kilometers. Amount of this railway loan is £5,000,000 (interest for a period of 15 years, 5 per cent per annum). Creditors are Britain, France and Japan.

(*c*) Peking-Mukden Railway, 847 kilometers having also a branch line extending 516 kilometers. Creditors are Japan (the S.M.R.) and Britain (the Chungying Kungssu). The amount of the loan covered by Britain is £2,300,000, raised in 1898 (interest 5 per cent), £500,000 raised in 1921 (interest 8 per cent), and £509,000 raised in the same year (interest 8 per cent).

(2) British mining interests in North China:

(*a*) Kaiping-Lwanchow Coal Mines.

(*b*) Mentoukou Coal Mine. 47 miles north of Peking along the Peking-Suiyuan Railway.

(*c*) Mining rights obtained in Shansi by the Kungssu. Besides the above, in North China the British have communications, shipping and electric interests, but they are rather minor importance, compared with railway and mining interests.

The United States' economic advance in North China is belated, as compared with the advance of other Powers. Consequently, its economic interests in North China are such inconsiderable nature as to be worth little mention. But it has made certain notable investment in cultural works. This may be ascribed largely to the United States' internal circumstances due to its government's administrative policies in the past. However, this does not necessarily mean that the United States in the past has been entirely indifferent to North China. On the contrary, in times past there have been rather aggressive moves, though the United States itself has outwardly advocated peace. Such moves on the part of the United States may well be understood by remembering John Hay's declaration of the Open Door.

Cultural Work First

Thus, the United States' North China activities began with the launching of cultural undertakings, which were followed by the investment of capital in economic enterprises. The following are the more important of the United State's economic activities in North China.

(*a*) Aviation. The advance achieved by American capital in aviation enterprises is indeed marvelous. In 1920, there materialized a contract for a $4,000,000 credit between the American Curtiss Airplane Company and the National Government. Again, in July, 1930, a contract was entered into by the above American Company and the Communications Department of the National Government, whereby the United States acquired the right to establish the China Aviation Company. Capitalization of this new Aviation Company is 10,000,000 yuan, of which 4,500,000 yuan is the United States' share. Air routes under the control of this company comprise the Shanghai-Peking, Shanghai-Hankow, the Chungking-Chengtu, the Chungking-Kunming, and the Shanghai-Kwangchow routes, the total length of which extends 5,847 kilometers.

(*b*) Railway Loans. The United States practically may be said to have contracted no railway loans. It has made only small investments in the Peking-Suiyuan Railway.

(*c*) Mining. In Shensi Province the United States has certain oil mining rights.

(*d*) Cultural works. Perhaps the United States leads the Powers in its investments in cultural works in North China. It operates various kinds of schools, numbering in all, 88. It has also 70 Christian churches, 48 hospitals, and 12 propaganda organs.

The history of Germany's economic advance in North China dates back to the end of the 19th century. As a result of Germany's conclusion with China of the Tientsin treaty of 1895, it obtained exclusive settlements in Tientsin and Hankow. Since then it steadily gained influence in China, politically and economically, until the outbreak of the World War when it suffered much particularly economically.

Reich Influence Rising

Germany to-day is steadily regaining its old influence in the field of economic and commercial activity. The following are roughly Germany's economic interests in North China.

(*a*) Railway loans. Germany's railway rights in North China practically have all ceased to exist, with the exception of those in the Tientsin-Pukow Railway. Germany's effective loan to the Tientsin-Pukow Railway amounts to 7,830,000. There is also Germany's claim to rights in the Peking-Suiyuan Railway, which amount to 2,900,000 yuan capital and interest included.

(*b*) Mining. In the Chingching Coal Mine, Hopei, Germany has now only nominal rights, though it has a claim as a creditor for a loan contracted for mining purposes.

(*c*) Aviation. German investments in China after the World War have been perhaps most active in the field of aviation. The Europe-Asia Aviation Company, jointly established by Germany and China has an authorized capital of 7,500,000 yuan, of which 2,500,000 yuan is Germany's share.

Japan's Special Position

Japan's special position in North China may be categorically analysed under the following four headings :

(1) Contiguity of the North China area to the State of Manchoukuo.

(2) Rights by virtue of treaties or agreements.

(3) Loans and economic investments.

(4) Special trade and Japanese population.

First, that contiguity is one of the most important causes for a nation's special position is approved by international law. The fact that North China is territorially contiguous to Manchoukuo, Japan's ally, gives Japan its special position. The Manchoukuoans and the North China people are closely related by blood, both having descended from the same Han stock. With peace and order perfectly established in Manchoukuo, the intercourse between those two peoples will become closer. With such a situation quickly developing, it will become ever more necessary for Japan to make the North China area immune from any untoward moves calculated to disturb peace and order in that area. Such a necessity is badly felt, particularly in view of the existing menace of Communist activities.

Treaties Advance Japan

Japan's special position in North China due to treaties and agreement is extremely comprehensive and has a long history. First, there is the Final Protocol signed in 1901 regarding the solution of the aftermath of the Boxer Trouble, which gave Japan legation or embassy policing rights in Peking. Again, by virtue of this treaty Japan has been given garrison-stationing power in the Peking embassy and legation quarters and also along the Peking-Mukden Railway, between Peking and Shanhaikwan. Second, an official note was exchanged between Japan and China in 1902 regarding retrocession of Tientsin.

Policy of Japan in the Orient

(*Continued from page 367*)

decline of rubber quotations on the world market. Then too the number of foreign tourists has dropped since the outbreak of the Incident. On the other hand, no corresponding declines have been seen in the nation's payments in this trade. Such being the case, the excess of receipts over payments in this trade, which was Y.233,000,000 in 1936, is expected to fall to Y.150,000,000 or thereabouts. However, I am not too pessimistic about the balance of international accounts. Besides the excessive receipts in the invisible trade, we have mined gold estimated at Y.150,000,000 at least a year.

China and Manchoukuo will not remain for ever in the status of primary producers, although it may be hardly possible for them to promote highly developed modern industries. Some manufacturing industries will in all probability make progress sooner or later, but such industries must be so controlled that they may supply the local needs on the spot and not compete with those of Japan. In general, promotion of some manufacturing industries on the continent is not at all objectionable but welcome as the flower in May, for the expansion of capital goods industries here is dependent on the continental market. Development of some industries on the continent would of course affect the business of small scale interests in the same fields here. In this connection, I suggest that some enterprises here be transplanted into China and Manchoukuo to make the best use of the abundant cheap labor there.

Economic Bloc Needed

In conclusion, I must repeat that Japan's economic and trade policies must have as their ultimate objective the consummation of the economic bloc in the Far East. It is a matter for congratulations, in this respect, that the new currency in North China, as well as that in Manchoukuo, has already been linked at par with the yen.

Last but not least, spiritual fusion is required for the lofty ideal of co-existence and co-prosperity among Japan, China and Manchoukuo, because sheer economic ties are far from sufficient to unify them on a permanent basis. In promoting our continental development works, therefore, we must follow the principle of paternity and reciprocity instead of seeking profits. Then again, utmost efforts must be made to develop cultural enterprises, as well as trade and industry on the continent.

Although it is at present impossible for Japan to invite to her economic bloc other Far Eastern countries which are mostly controlled by Western Powers, it is imperative to maintain close relations with such countries as markets for our goods and suppliers of materials to our industries. Actually, it is a matter for great regret that a large number of Chinese residents in the South Seas are possessed of a deep-rooted anti-Japanism, and that even natives there, misguided by ill-disposed propaganda by Chinese and Westerners, have come to consider our country as being an outrageous aggressor—a fact which is a grave obstacle to promotion of trade with the South Seas. Such unhappy misunderstanding can be dispersed only after the ideal of co-prosperity among Japan, China and Manchoukuo is materialized as an object lesson.

Flood Prevention in China

(*Continued from page 389*)

The Yellow River, for example, offers the favorable conditions of steep slope, fine material, heavy silt content, few tributaries, and a reservoir site." Other experts have pointed out that the river has a silt load amounting, according to estimates, to something like 1,000,000 cubic yards of solids per hour. It is obvious that there would be a rapid decrease in the capacity of a reservoir which abstracted any considerable portion of silt from the Yellow River in flood.

A plan of lower river detention reservoirs has been suggested for the Lower Mississippi. On the Yangtze large lakes, such as the Tung Ting Ho and Po Hong Yu, have formed natural detention reservoirs. These and dozens of smaller lakes could have their capacity for storage increased considerably at an almost insignificant cost by raising the banks, etc. If any form of detention reservoir were provided which would reduce the required height of the dykes by only 1-ft., the result would be the saving of many millions of dollars in construction costs over the long stretches of water guarded by dykes.

Unfortunately, in recent years large areas of land from lakes useful for storage purposes have been reclaimed. All over China, man's struggle for land for crops, conflicting with the demands for space for river regulation by engineers, has been one of the difficulties connected with the country's hydraulic problems. The issue is as much one of administration as of engineering, just as it is along the Mississippi. In China the fight for space between the people and the river water has grown increasingly bitter. The population has steadily increased—it has roughly doubled in 150 years, in spite of emigration—pushing the dykes towards the river channels and lakes to obtain arable land, thus contracting the high-water flood and raising the flood level. In addition, the people have been driven to cultivate less fertile lands up the hills, thus creating worse run-off conditions during heavy rainfalls.

Industrial Development of Netherlands East Indies

By JAMES A. RABBIT, in the Japan Times

ACCOMPANIED by my wife, I visited Java last year and learned that the economic crisis in that country had passed, and the upturn had come in the sugar as well as other exporting industries.

Many manufacturing industries had been established under the new policy of the Dutch East Indies Government, with the support of the mother country, during the past five years, in order to make the N.E.I. industrially sufficient unto itself and to protect these colonies from another crisis such as they have gone through by reason of having their entire income dependent upon the export of agricultural products.

This change in the economic structure of the N.E.I. was made necessary by the fact that the native population was, during the recent curtailment in the agricultural export industries due to the world depression, unable to find any balanced outlet for their labor which would enable them to earn sufficient cash to pay their taxes. I observed that the growth of industries in the N.E.I., under the government's protective measures, is progressing at a reasonable pace, on an economically sound footing.

There are basic agricultural and mining industries for products which the world will continue to demand in fair quantities—to a value equal to Japan's silk industry—as a balance against any mechanical industries which may be established.

There is a great difference between agricultural industries under European management and native agriculture. Likewise, there is a corresponding difference between manufacturing industries under European management and the native industries. Those under Western management are organized on modern lines and employ imported materials to a great extent, utilizing the cheap native labor; while the native industries turn out articles for the native population, and are, for the most part, in a somewhat primitive condition, excepting those cases which have received Government assistance in organization and equipment. There is also a tendency on the part of native industries to be active only during those periods when the crops and fields do not require direct attention.

Native Products

The native industries furnish the greater part of the supply of clothing, foodstuffs, dwellings, household necessities, bricks, tiles, straw wrappers for cigarettes for local consumption, and a large variety of art objects including gold and silverware, jewelry, copperware, glassware, and curios for the tourist traffic. They are likewise prominent in the production of export articles such as pandan and bamboo hats, as well as batik for sarongs which find a large market in Malaya and Siam. The native industries also produce village textiles known as among krido, straw bottle covers, native sandals and other foot wear (sometimes made of old automobile tires).

The European industries include cement, printing paper, cardboard, weaving mills, cigar and cigarette industries, inks, dyes, varnishes, tanning, explosives, fireworks, phonograph records, automobile assembly, bicycle assembly, packing cases for tea, printing, aerated water, ice, brewing, foundries, machine works, paint works, automobile tire factories, soap.

The N.E.I. has a land area of nearly three quarters of a million square miles (about three times the area of the Empire of Japan), or approximately one quarter the area of the U.S.A. It is nearly equal to the combined areas of Austria, Belgium, Czechoslovakia, France, Germany, Portugal, Spain and Switzerland.

The archipelago is practically wrapped around the equator from 6 degrees N. to 20 degrees S. The islands are intensely tropical, with an abundance of rain and high humidity, with the exception of a dry season from May to October, but the weather varies with altitude, distance from the sea and air currents.

Most of the islands are mountainous, there being a long range extending from North Sumatra, through Java and the islands of the Eastern end of the archipelago. The soil is of volcanic origin, rich and highly productive.

The census of 1930 showed a population of about sixty-one million, made up of about fifty-nine million natives and about one million three hundred thousand Chinese and other Asiatics and two hundred and forty thousand Europeans and Americans; with two-thirds of the total in Java, fourteen per cent in Sumatra and the balance in Borneo, Celebes and other islands.

The natives are composed chiefly of two main families: Malayan and Polynesian. Malay is the trade language and Dutch is the official language. The greater number of the natives are illiterate.

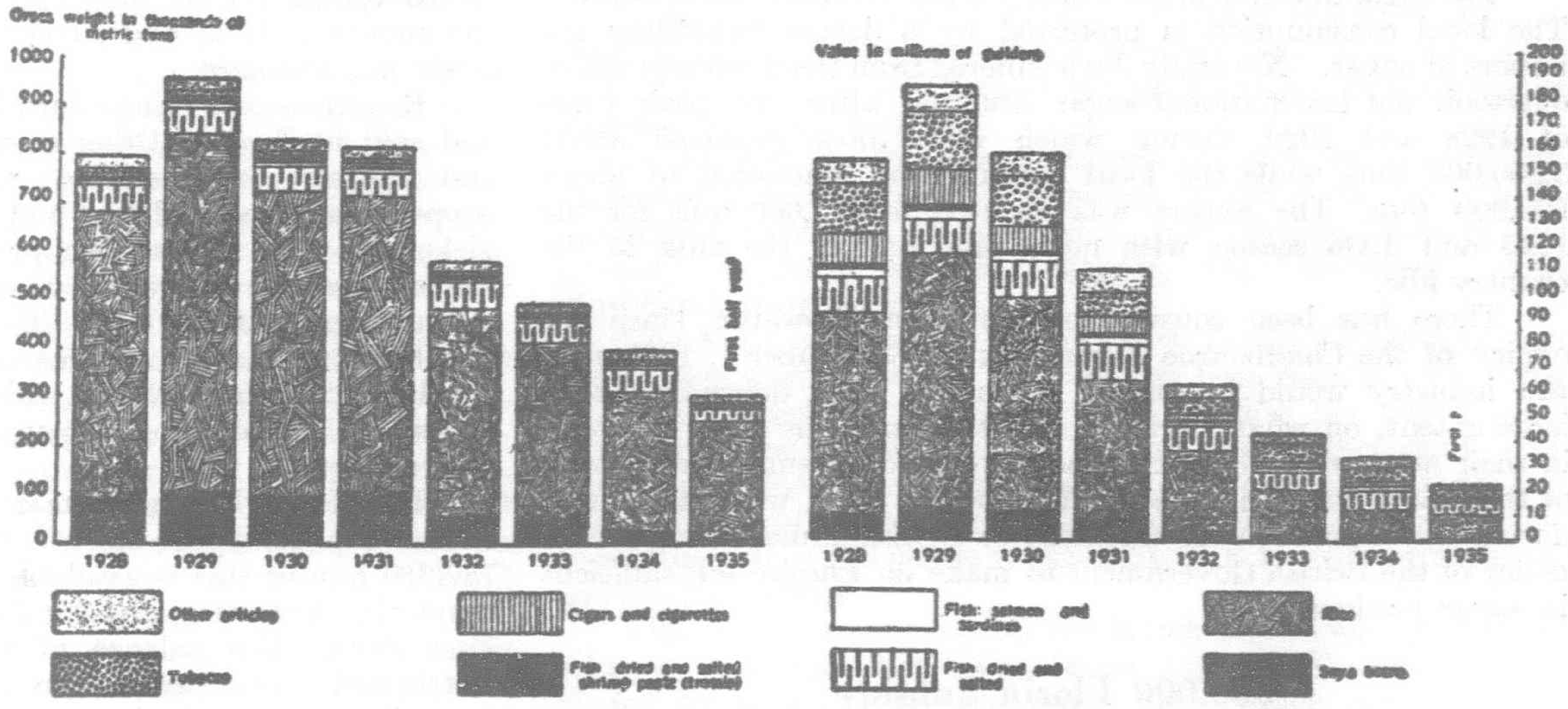


Chart "A."—"Foodstuffs and consumption luxuries for the natives"

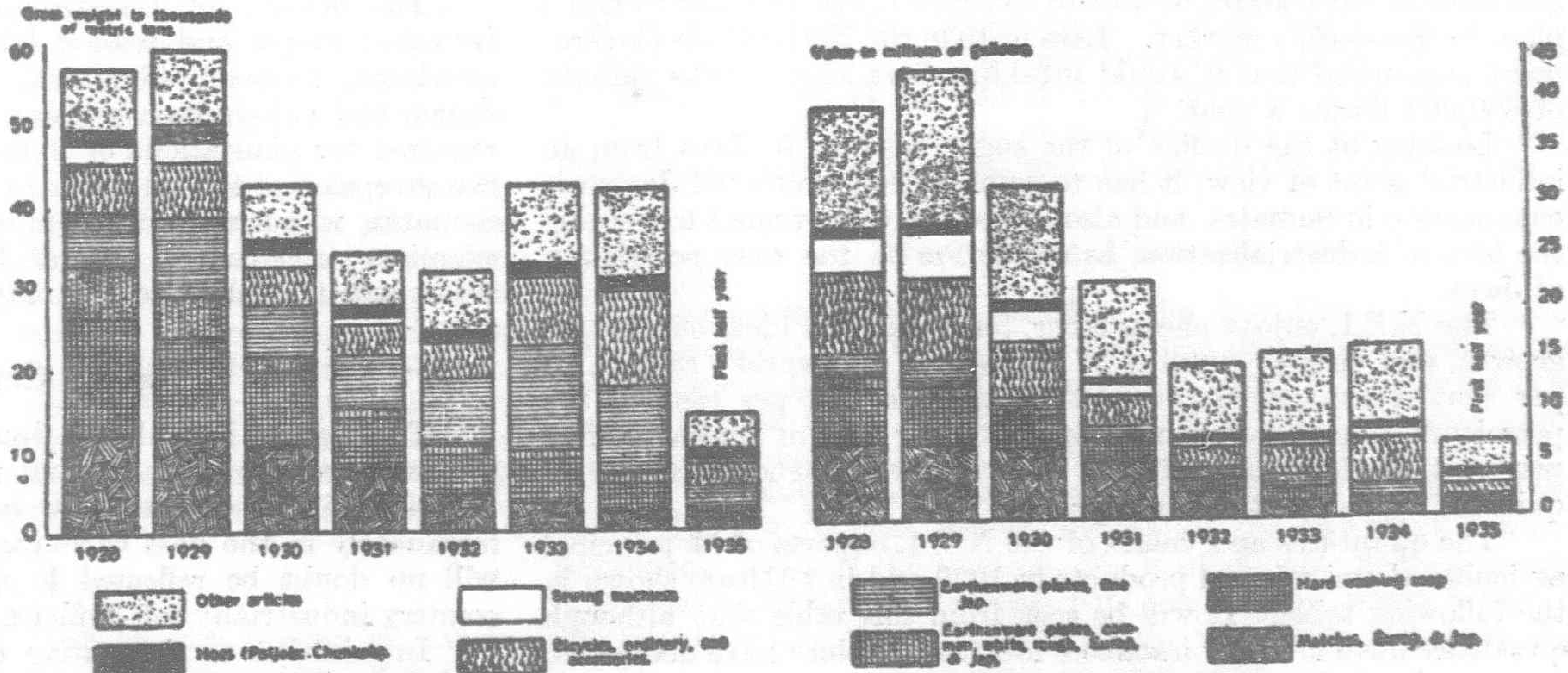


Chart "B."—"Articles of daily use and clothing for the natives"

They are Mohammedans for the most part but in a social rather than a religious way.

There is a high standard of living among most of the Europeans but the natives have a very low living standard and require about four-fifths of their income to purchase or trade for bare necessities. During the recent depression the use of currency almost disappeared from the native life, with a reversion to barter.

The influence of the depression in the N.E.I. which began in 1929 due to the slump in the world's markets was, to the casual visitor in Java, most evident in the lack of guests at hotels and the despondent note in the conversation of all importers and exporters. A very interesting phase of this slump in connection with sugar, the chief crop of Java, is indicated by the fact that while exports declined rapidly from the peak of 2,688,000 tons in 1928-1929 season, production was maintained at a high level until 1932, as indicated by the following table:

IMPORTS DECLINE

(In tons)

	Production	*Export*
1928/29	2,986,000	2,688,000
1929/30	2,942,000	2,356,000
1930/31	2,969,000	2,141,000
1931/32	2,843,000	1,542,000
1932/33	2,611,000	1,331,000
1933/34	1,401,000	1,109,000
1934/35	646,000	1,188,000
1935/36	512,000	877,000

During the corresponding period there was a sharp decline in imports of foodstuffs and in the consumption of luxuries for natives, as indicated by Chart A. The imports of articles of daily use and clothing for natives also declined as indicated by Chart B, but it will be noted that the articles of daily use did not follow definitely the downward trend of luxuries. The native propulation recovered a certain mean level in the consumption of necessities quicker than the rest of the country.

The sugar industry in Java is dependent on a free world market. The local consumption is protected by a decree forbidding the import of sugar. Naturally Java suffered from the doldrums which overtook the international sugar situation after the peak years of 1928 and 1929, during which years Java exported about 3,000,000 tons while the local consumption amounted to about 400,000 tons. The export was reduced to 877,000 tons for the 1935 and 1936 season with more than half of the mills in the country idle.

There has been considerable optimism, however, since the expiry of the Chadbourne Agreement on September 1, 1935, that the industry would be put on a sounder basis, depending, to a large extent, on what sacrifices might be made by other countries in their attempt to balance production and consumption. Many of the plants which had been shut down in Java, were dismantled during the depression for shipment to British India, owing to the policy of the British Government to make its Empire self-sufficient in sugar production.

800,000 Florin Subsidy

Generally it was hoped that at least half of the sugar plantations and mills in Java would be able to continue operations and to find a place in the world's market. Late in 1936 the Netherlands Government announced that it would subsidize Java sugar to the amount of 800,000 florins a year.

Looking at the decline of the sugar business in Java from an industrial point of view, it has to some extent promoted Javanese colonization in Sumatra, and also forced the Government to develop the idea of industrialization, as a solution to the over population of Java.

The N.E.I. enjoys cheap labor, fertile soil, an ideal climate for growth, and already supplies 37 per cent of the world's rubber, 20 per cent of the tin, 16 per cent of the tea, 2.8 per cent of the petroleum, 80 per cent of the pepper, 8.5 per cent of the sugar, five per cent of the coffee, 90 per cent of the chinchona (source of quinine), 24 per cent of the coprah.

The quantities and values of the N.E.I. exports of its principal agricultural and mineral products in 1929 and in 1934 are shown in the following table. It will be seen from this table that although quantities have in many instances increased, values have decreased, as a result of the world economic depression.

COMPARISON OF VALUES versus QUANTITIES

N.E.I. Exports in 1929 and in 1934

	Exports of 1929		*Exports of 1934*			
Products	*Quantity in Metric tons*	*Values in Million Guilders*	*Quantity in Metric tons*	*Values in Million Guilders*	*Change in Quantity*	*Net Returns in Values*
Agave	58,700	20.6	67,700	5.8	+15%	−72%
Cassave ..	273,000	21.1	144,700	7.2	−47%	−66%
Coffee ..	80,700	67.9	81,000	22.5	+0.4%	−67%
Coprah ..	508,800	97.6	421,800	16.8	−17%	−83%
Kapok ..	17,700	13.4	21,000	6	+19%	−55%
Palm Oil ..	30,600	11.2	121,300	8.7	+296%	−22%
Pepper ..	28,200	48.4	48,200	15.3	−71%	−68%
Petroleum ..	4,441,000	185.2	4,192,000	98.6	+11%	−47%
Rubber ..	262,700	233.4	385,000	87.9	+47%	−62%
Sugar	2,946,400	311.6	1,103,900	44.8	−63%	−86%
Tea	46,300	39.5	64,200	44.9	+39%	+14%
Tin	41,700	79.2	23,300	32.9	−44%	−58%
Tobacco ..	75,300	83.2	45,000	39.3	−39%	−53%
Chinchona ..	10,300	10.4	6,400	6.4	−38%	−38%

This table is an eloquent example of the panicky fluctuations to which commodity prices are subjected in an economic world where prices are based on the principle of "what the traffic will bear" rather than the cost of production. In juxtaposition it is interesting to observe that chinchona, which is the only commodity that is a government monopoly, supplying 90 per cent of the world's demand, was stable in price throughout the depression, although the quantity produced fell off by 40 per cent.

It might easily be inferred from this example that our industrial world would be less liable to the severe shocks of depression-quakes if its economic machinery could be managed by a benevolent despotism instead of the present laissez-faire system.

Mineral Resume

The N.E.I. possess many minerals, of which petroleum, tin and coal are the most important. Petroleum and tin are already being mined and refined to a considerable degree and coal is being mined commensurate with the present industrial development of the country. Gold and silver are mined to the extent of about 3,000 kg. annually.

Bauxite is now being mined in the island of Binton, off Sumatra, and sold in Japan. Other minerals which have been prospected and partially exploited are: asphalt, iron, manganese, wolfram, copper, zinc, lead, sulphur and iodine. Diamonds, platinum and nickel are also reported as present. Salt is produced from sea water by solar evaporation, as a government monopoly; the value was guilders 19,000,000 in 1928.

Forestry has been extensively developed, the exports of teak wood in 1927 being 272 tons, valued at guilders 9,106,000. We saw considerable land being prepared for teak as we motored through the country.

The N.E.I. has an estimated potential of over six and a half million h.p. for hydro-electric power. Unfortunately only about 787,280 h.p. of this is available in Java, and of this amount the proportion in Central and West Java is much greater than that in East Java. The balance of nearly 6,000,000 h.p. available is distributed about two million h.p. each in Sumatra and Borneo, one million in the Celebes and one million among all of the other islands.

The density of the population in Java (818 per sq. mi.) furnishes ample and willing labor in all districts. In the outer provinces, however (Sumatra, Borneo, etc.), the population is sparse and enjoys such relative prosperity that most of the labor required for plantations or industries is imported from Java, with the exception of the tin mines in Banka, Billiton, Singkep and East Sumatra, which are worked mostly by Chinese. The government exercises strict control over all labor recruiting to insure fair contracts and treatment to the natives.

Native Craftsmanship

The Javan has always had a fine sense for craftsmanship. Originally everyone made what was required for his daily use and the most simple objects show inherent art. The government has fortunately in the past encouraged native art and industry which will no doubt be reflected in the present policy of making the country industrially self-sufficient.

In addition to the native craft in creating fine examples of wicker-work of all kinds for domestic use, hats, ornamental girdles, shields, walls and floors of houses, they have reached a high degree of skill and fine artistic taste in the production of colored fabrics including those in which the patterns are dexterously woven with colored threads and also the batik work in which the colors are applied to the woven cloth of which literally millions of yards are made in innumerable patterns and designs for every day wear by men, women and children throughout the archipelago.

The native skill in metal work is of particular interest. They produce with rare skill a wide variety of objects in brass including bracelets, anklets, spout kettles, combs, spittoons, lamps, dishes, models of rice sheds, prayer houses, boxes, tobacco pipes, etc. The wrought weapon known as the kris which is supposed to have magic power, has much in its creation which resembles the fine sword making of Japan.

What is known as the Pamor Kris is made by welding three strips of steel together with two strips of meteoric iron, which is found in some parts of the archipelago. The blades are treated with a mixture of lemon water and arsenic which causes the meteoric iron to become white and the steel dark thus bringing out curious patterns. The kris makers are regarded as a religious cult, receiving veneration similar to that paid to the sword-smiths of Japan.

Technical Schools

The government has established technical schools and technical high schools for training the natives for the industrial development of the archipelago. This training has already furnished skilled operatives in the state railways, arsenals, dockyards and agricultural and mining industries (cane sugar, rubber, tea, oil, tobacco, petroleum and tin) which have been conducted on a large scale by outside capital under European management and also for the newer mechanical industries designed to make the N.E.I. industrially self sufficient.

There are tanneries, brickyards, printing works and Portland cement works distributed about the country in fair numbers. Lever Brothers have recently established a soap factory at Batavia. At Tandjong Priok near Batavia, is the large assembling plant of the General Motors Company.

We motored about two-thirds of the way from Batavia at the west end of Java to Sourabaya at the east end, stopping at Buitenzorg where the Goodyear Company have recently erected a tire plant, and at Bandoeng where are located the state railway shops, arsenal and government quinine factory. In Pandalarang—near Bandoeng —is an up-to-date paper mill in which rice straw is used for pulp.

Throughout the trip to Djokjakarta (whence we entrained for Sourabaya) we were impressed by the density of the population, its cleanliness (personal bathing and laundering were visible in all streams), and the bright colors of the sarongs (principal garment), the badjoos (jackets) and kain padong (shoulder cloths).

The textile industry is the most promising of all native industries. In Garoet, where we stopped, there is a plant producing 42,000 colored (woven) sarongs monthly. It is reported that new looms are being put into use at a fairly rapid rate; there having been 750 hand looms in use at the end of 1931 which were increased to 6,000 plus 7,000 power looms by the end of 1935. It is reported that there are about 12,000 people already engaged in this industry in Java alone.

Up to a few years ago practically all of the colored woven sarongs were imported but under the new industrial encouragement movement the domestic production increased to 900,000 pieces in 1934 and 1,500,000 pieces in 1935, the present supply representing about 25 per cent of requirements. The government has established a textile school at Bandoeng, so this industry bids fair to continue to develop on a sound basis.

When we reached Djokjakarta we saw native women designing and dyeing batik work in almost every doorway, and those not engaged in the production of this printed cloth were busy trying to sell what had been produced. The artistic sense of these people and their skill in producing such intricate designs free hand is as impressive as it is to see children painting porcelain in Japan. In both cases the impression given to the Western engineer is that these workers are eminently fitted for light industry which requires skill and dexterity with the hands and an immunity from the mental fatigue caused by the monotony of repeated operations.

Native Art Centers

Djokjakarta, and Sourakarta near by, are centers of native arts and crafts where there are produced a wide variety of wickerwork, articles of metal, tortoise shell, buffalo hide and other novelties. The hat industry has, by the support of Europeans and Chinese, been developed into an export industry employing about 60,000 natives. Formerly, the panama hats produced in Java were exclusively from bamboo but at present they are made to a great extent from the pandan leaf.

Sourabaya is the center for iron-casting. The N.E.I. naval dockyard where steel ships are constructed, is located there. There are two floating drydocks, one for 4,000 and one for 8,000 ton ships. The writer interviewed the engineer-director of the Droogdok Maatschappij (Soerabaia) N.V. (Drydock Company Sourabaya Ltd.) and was advised that labor conditions were very favorable in Sourabaya for ship repairs and that their business had increased five times during the past two years. The director described the native workers as cautious, docile and obedient, but lacking in initiative and also somewhat improvident. The effect of the latter characteristic inclines them to take holidays if they earn too much money.

Feast of Ramadan

It is also reported that although labor is cheap (about 30 to 60 cents N.E.I. money per day for unskilled labor and three guilders per day for skilled mechanics), the employers find it necessary to supply proper food and medicine (especially quinine) in order to maintain the health and strength of the workers. It is also said that as all of the natives are Mohammedans, they are unable to attend work properly during the feast of Ramadan which lasts for several weeks once in the year. During this season the Mohammedans are not permitted by their religion to take food while the sun is up and in addition to this weakening custom they must, at the same period, pray many times during the night.

At Sourabaya there has been established a modern brewery which, with the one at Batavia is sufficient to meet 60 per cent of the demands in the N.E.I.—the climate being conducive to the success of these establishments.

There is an excellent market for radio receiving sets and phonographs in the N.E.I. The bulk of the radio apparatus comes from Holland while the bulk of the phonographs and records are supplied by Great Britain.

In addition to the new industries which have already been mentioned herein, there is apparent activity in such newly established industries as margarine, iron drums, pottery and crockery, buttons, electric batteries, felt, chemicals, yeast, chocolate, syrup, maizena.

The N.E.I. are serviced by the Royal Dutch Air Lines between Amsterdam and Batavia. The time has been reduced to five days on a weekly service, which is so popular that the merchants of Singapore have insisted that the Colonial Post Office shall accept British mail for Dutch planes which stop at Singapore on their flights East and West. There is a complete network of air lines connecting all main points within the N.E.I. with prompt, safe and efficient service.

The N.E.I. is serviced by the Koninklijke Paketvaart Maatschappij and the Java-China-Japan Lijin, N.V., besides being visited by several other steamship lines, which carried a total cubic tonnage of 15,492,800 in 1931. The N.E.I. Archipelago has a coast line equal to the circumference of the earth, and possesses numerous fine harbors. There are more than twelve good harbors in Java and as many in the outer provinces. About 88 per cent of the imports and 74 per cent of the exports, by value, are handled by Tandjong Priok (Batavia) at the West end of Java, Tandjong Priok (Sourabaya) at the east end, the Samarang—north center.

Steel Plant Planned

When we left Java we sailed on the Java-China-Japan Line, s.s. *Tjisaroea* for Manila, stopping for a half day at Macassar in the Celebes (one of the outer N.E.I. provinces) where it is reported that there is a plan being considered to erect an iron and steel plant utilizing local new materials.

We next stopped at Balikpapan in East Borneo (another of the outer N.E.I. provinces) where we stayed for two days loading petroleum, paraffin, lubricating oil, road oil and leather mostly consigned to Shanghai. At this port the refinery, which is one of the largest in the world, is right on the water-side of a beautiful

(Continued on page 403)

New Zealand's Electric Locomotives

By H. H. ANDREWS, M.I. Loco. E., in the English Electric Journal

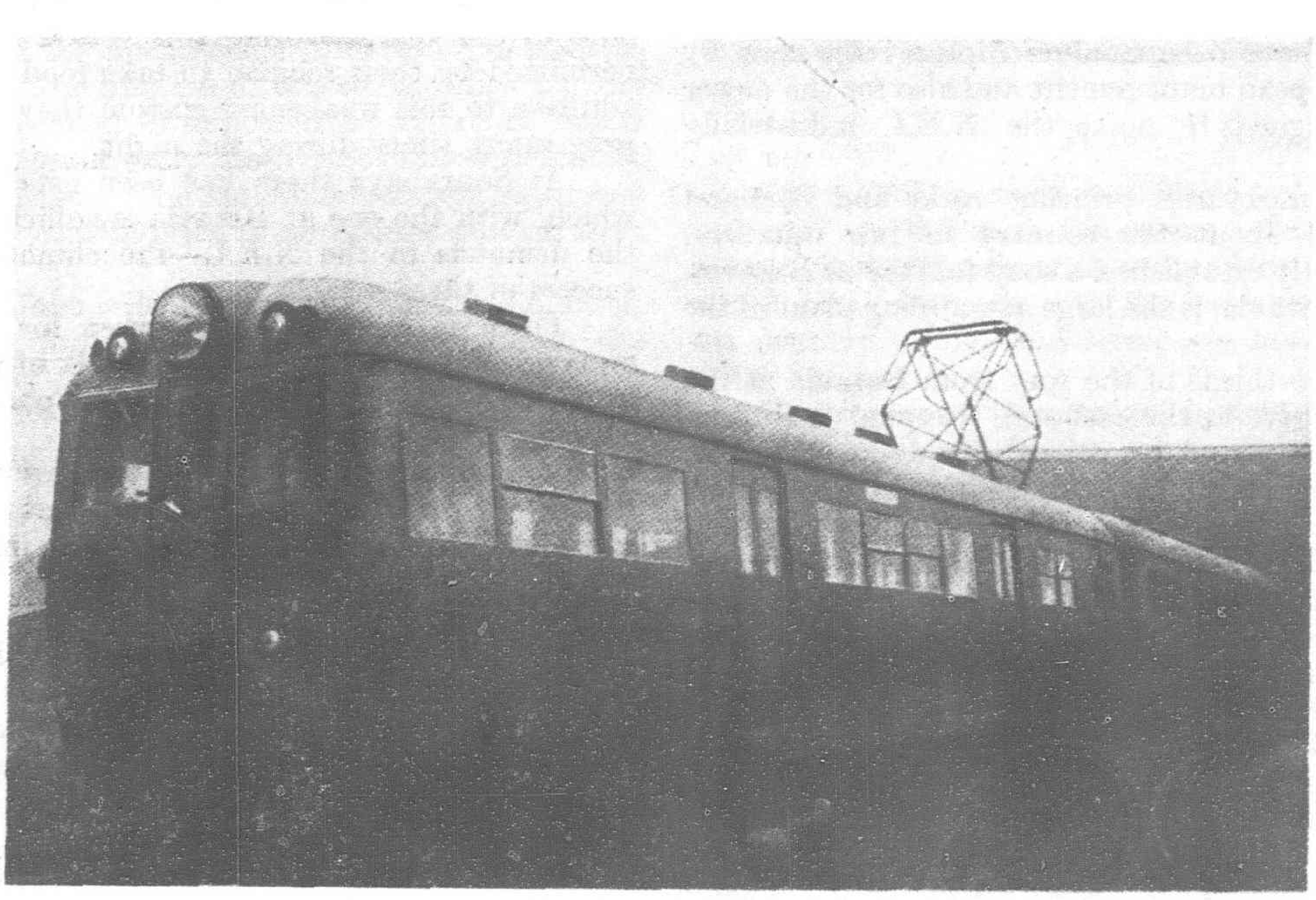
The steps taken progressively from 1921 by the New Zealand Government to electrify portions of their railways constitute one of the most interesting chapters of the English Electric Company's activities in railway electrification. Following the first electrification, that of the Otira Pass section, came the supply of locomotives and substations for the Christchurch-Lyttelton section on the South Island. Now, in this article is described the locomotive and motor coaches recently built for the Wellington-Paekakariki and Wellington-Johnsonville line in the North Island.

The electrification to Paekakariki covers the first 25 miles from Wellington of the main line to the north of the island. The maximum grade on the line is 1 in 57, and the section includes the recently constructed Tawa Flat tunnels, totalling 3½ miles in length.

The line to Johnsonville, 6½ miles long, serves a popular residential district. It is a heavily graded line with a considerable portion of 1 in 40.

Locomotives

For the Paekakariki line eight locomotives have been built; the first of them has been built entirely in England, the electrical equipment at the Bradford Works of the English Electric Co., the mechanical parts at Newcastle-on-Tyne by Messrs. Hawthorn Leslie (now Messrs. Robert Stephenson & Hawthorns, Ltd.) and the whole locomotive assembled and tested at the English Electric Co.'s works at Preston before shipment from Liverpool. The remaining seven locomotives are now under construction in New Zealand, the electrical equipment having been manufactured in England, and shipped, together with certain special parts of the locomotives, for assembly there. In addition to these eight, equipments for two similar locomotives to supplement the existing service in the Otira tunnel section have been shipped for erection on mechanical parts being constructed in New Zealand.



One of the Multiple Unit Electric Trains

All these locomotives are of the 2-8-4 type. The salient particulars of these locomotives are given in the following table :—

Gauge	3-ft. 6-in.
Wheel arrangement	2-8-4
Weight in running order	88 tons
Horse-power (one hour)	1,240
Tractive effort (one hour)	18,000 lb.
,, ,, (maximum)	34,000 lb.
Maximum speed	55 m.p.h.
Line voltage	1,500-volt D.C.
Number of traction motors	Four
Transmission system	Spring cup quill drive
Control voltage	120-volt D.C.
Control system	Electro-pneumatic
Brakes	Westinghouse air brake, Type A.7 E.L.
Train heating boiler	Sentinel, evaporating 1,250 lb. of steam per hour
Service	250-ton passenger train—55 m.p.h. 500-ton goods train—45 m.p.h.

As will be noted, the locomotives have to be capable of a very variable duty, dealing with both freight and passenger traffic, on grades up to 1 in 57; further there is an axle load limit of 16 tons. With these varying factors, and taking into consideration the possibilities of extended duties in the future, this type of locomotive was decided on as representing the best all-purpose locomotive to suit the conditions.

Mechanical Portion

The main frame of the locomotive is built up of two 41-ft. 10-in. rolled-steel slabs 4½-in. thick. The side frames are riveted at each end to end-frame castings carrying central buffing and draw-gear of standard New Zealand Railway pattern. Intermediate cross-frame stays also serve as supports for the main traction motors which are rigidly secured to the locomotive structure. The axle-box horn guides are fitted with renewable wearing strips of manganese steel, and the cast-steel axle boxes are fitted with S.K.F. roller bearings.

All springs are of the laminated leaf type; compensation is provided between all the driving axles and the pony axle. The bogie is not included in the compensation scheme but the bogie axles are equalized in the usual manner. Both the pony truck and bogie truck are provided with swing link suspension, sufficient transverse displacement being allowed to ensure satisfactory running on five chain curves.

The superstructure of the locomotive is of sheet-steel on the section framework. It is subdivided into a driving compartment at each end, a boiler compartment, and an equipment compartment with a corridor communication along one side connecting the two driving compartments.

The motors, each of 310 h.p. at the one hour rate, are of standard forced-ventilated series type, connected in pairs in permanent series. The motors are rigidly bolted to locomotive frame stays and spur gearing consisting of a 19-tooth nickel-steel pinion and a 71-tooth gear wheel is provided between the armature and a quill concentric with the driving-wheel axle.

The quill transmits the motor torque to the axle through springs which give flexibility to the drive. The entire weight of the motor is thus spring borne, leaving only the dead weight of the wheels and axles unsprung. The quill consists of a hollow steel shaft fitted over the axle between the road wheels and carried by bearings supported from the motor frame, thus ensuring that the quill will always remain parallel to, and at a fixed distance from the armature shaft. The solid steel gear wheel is shrunk on to a cast-steel center, keyed to one end of the quill.

Clearance is provided between the inside of the quill and the axle to allow for both eccentric and angular displacement of the latter due to the movement of the axle boxes in the horn blocks. At each end of the quill a set of six spring cup brackets is carried. These brackets are secured to suitable faces, respectively in the flange remote from the gear wheel and the gear wheel center.

The torque of the traction motor is transmitted from the quill to the brackets by means of radial keys and each bracket is secured to the quill by means of two studs which do not transmit any forces. Centrifugal force is taken by spigots and the bracket faces. These brackets project between the spokes of the driving wheels and carry the spring cup units which transmit the motor torque to the driving wheels.

A spring cup drive unit consists of a housing containing a strong compression spring, which is held in place by two case-hardened steel cups fitted over each end of it; these slide in case-hardened bushings at each end of the housing. The cups are provided with shoulders which engage the inner faces of the bushings, thus limiting the outward travel. The inner faces of the cups are adapted to engage before the spring goes solid under extreme compression. The spring is of the highest grade spring steel and is only moderately stressed; provision is made for injecting lubricant (grease) into the housing.

Each of the cup drive units engages, in either direction of locomotive travel, with the spokes of the driving wheel to which are welded hardened steel plates to take the thrust. When free the cups are slightly clear of these pads. The pads are of sufficient area to allow a considerable amount of freedom of relative movement between the quill and the axle.

The advantages claimed for this type of drive are :—

(1) The springs are only subjected to pure compression stresses and do not experience any twisting or shear effects, thus the duty they are called upon to perform can be accurately predetermined.
(2) Each cup drive unit can be removed and replaced separately without dismantling any other part, either of the quill or the road wheels.
(3) Adequate lubrication both of the moving parts and of the driving unit itself and of all running surfaces is provided.
(4) In the event of a spring breaking, the broken parts remain enclosed in a cup and cannot cause damage to other parts of the mechanism. In an emergency, the gear would continue to operate for a time with a broken spring.
(5) None of the bolts is subjected to shear or bending stresses.
(6) The torque is transmitted direct to the road wheel spokes.
(7) The drive provides resiliency between the gear and road wheels.
(8) The whole of the spring cup quill drive is open to easy inspection.

Roller bearings are provided for the armature shaft of the traction motors.

The motors are forced ventilated by motor-driven blowers which draw the cooling air through metallic filters in the locomotive sides. The air passes via sheet-steel ducting to the motor air intake and is discharged through screened outlets at the pinion-end of the motor frame.

Control Gear

The control gear is of the unit switch type, electro-pneumatically operated. A bank of four line switches and 22 contactors, arranged for series parallel control provides a total of 23 notches, of which six are running notches, viz., full series and two weak field positions, full parallel and two weak field positions. The four line switches are disposed two in series with each pair of motors.

Current is collected by two double-pan pantographs, electro-pneumatically controlled from each driver's cab.

The main power circuit from the pantograph passes through a high-speed current limiter, normally short circuiting a limiting resistance. When opening, on excessive or sudden current rise, the limiting resistance is introduced and the circuit is finally ruptured by the line switches. Ordinary overloads are dealt with by the line switches alone.

The master controllers are of the drum type, operated by a notch-by-notch handle on a toothed quadrant, and mounted in each driving position. A dead-man pedal is incorporated with the driving positions. The control circuits are governed by an air pressure valve, so as to render them inoperative until the air pressure in the brake system has attained a pre-determined value.

The 1,500/120-volt motor generator set, the two 1,500-volt blower motors, and the 1,500-volt compressor motors are jointly protected by an auxiliary circuit breaker and individually by fuses. The locomotives are provided with couplers for multiple unit operation.

The locomotives are fitted with Westinghouse type A.7E.L. automatic and straight air brakes, and in addition, a hand brake at each end of the locomotive can be brought into operation independently of the air brake. The air-brake system is energized from two 38 cu. ft. compressors each driven by a 1,500-volt series type motor.

Air-operated sanding gear is provided.

An oil-fired steam boiler manufactured by the Sentinel Wagon Works, for heating the passenger trains, is housed in each locomotive. This boiler is capable of evaporating 1,250 lb. of steam per hour at 40 lb. pressure. The oil firing and water feed are fully automatic. Water tanks, holding 400 gallons of water are built into the underframe of the locomotives.

Motor Coaches

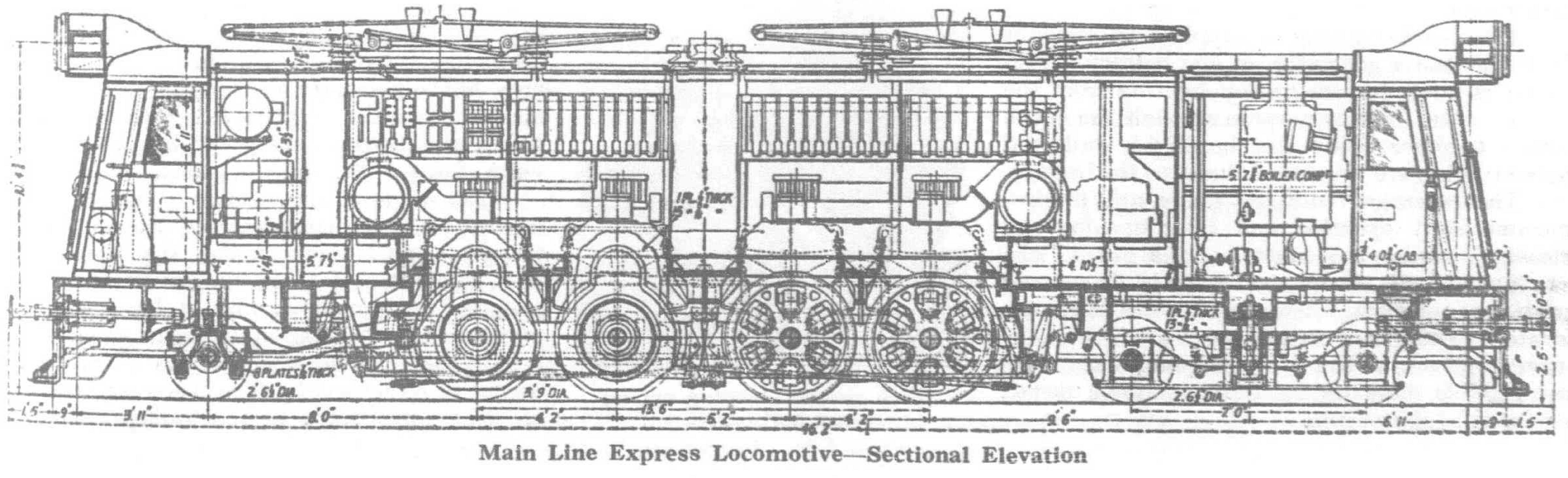
The contract for the supply of six two-coach units for the suburban service between Wellington and Johnsonville was placed with the Company concurrently with that for the Paekakariki locomotives. Each unit comprises a motor coach and a trailer. The motor coach can, if required, operate alone, or units may be made up into four, six or eight-coach trains, operating in multiple unit.

A very special feature of the contract lies in the fact that both the electrical equipment and the coaches have been designed and built by one company, thereby ensuing undivided responsibility. This afforded an opportunity to effect a new method of housing the electric control gear in the motor coach. The equipment was manufactured at Bradford, and the coaches at Preston, where they were finally assembled and tested.

The main features of the completed unit are tabulated below :—

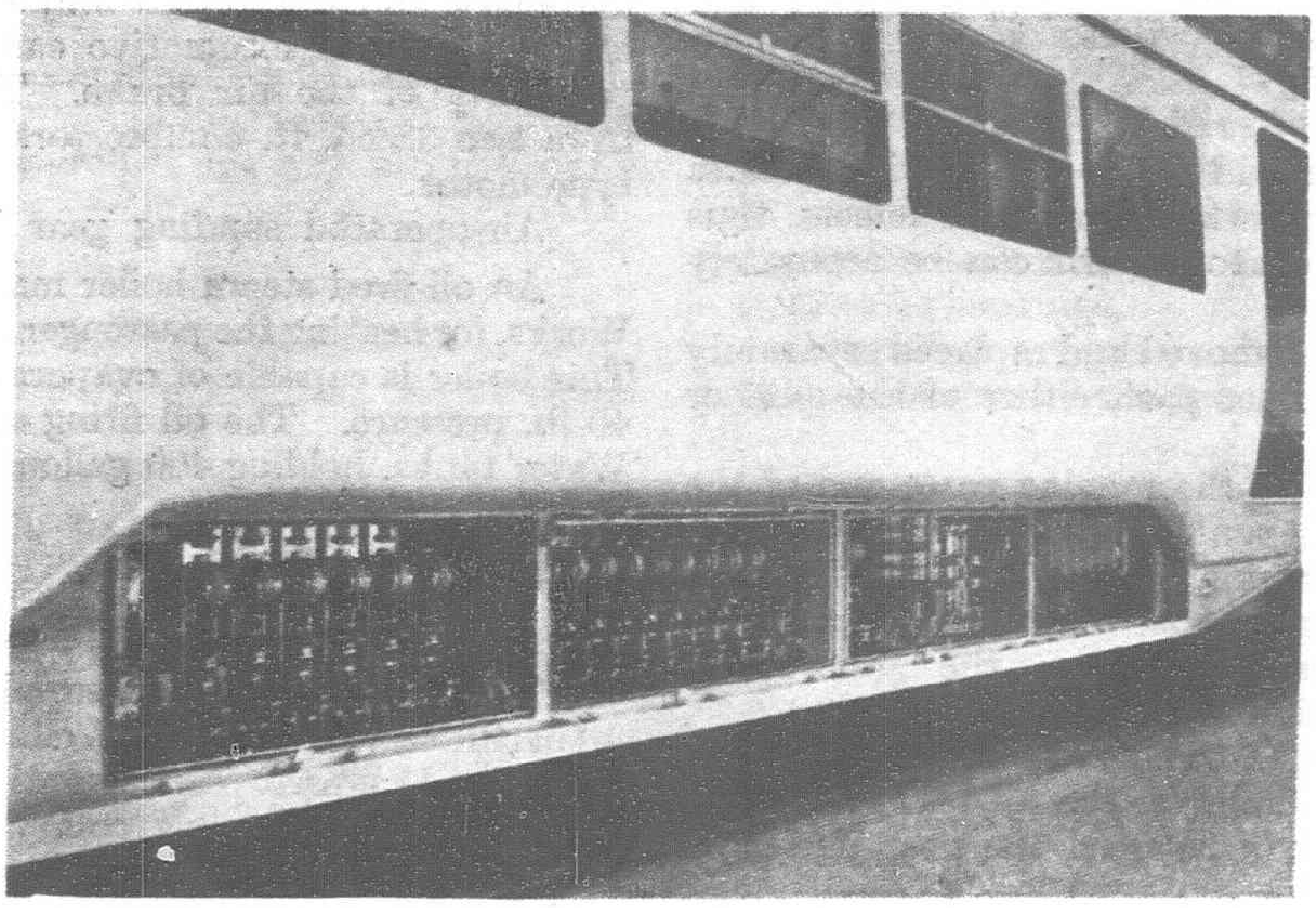
Gauge of track	3-ft. 6-in.
Ruling grade	1 in 40.
Train make-up	Each unit comprises one motor coach and one driving trailer. Four units can be run coupled together as one train.
Length of coach	60-ft. over headstocks.
Passenger seats, motor coach..	68
Passenger seats, trailer coach..	73

New Zealand Government Railways—Wellington-Paekakariki Electrification



Main Line Express Locomotive—Sectional Elevation

Weight of train unit (without passengers)	67 tons
Horse-power (one hour) per motor coach	660
Horse-power (continuous) per motor coach	480
Number of traction motors ..	Four
Maximum speed	55 m.p.h.
Normal acceleration	1.3 miles per hour per second on 2½% grade
Line voltage	1,500-volt D.C.
Control voltage	120-volt D.C.
Control system	Electro-pneumatic multiple unit, automatic acceleration
Number of driving positions ..	Motor coach—two. Trailer coach—one
Brakes	Westinghouse electro-pneumatic.



1,500-volt control gear, with inspection covers removed

Coaches

The coach underframes are of all-steel welded construction. Owing to the requirements of the steps provided at the passenger entrances, the frames are built up of three sections; the center portion sole bars being of Z section and the two end portions of rolled-steel channel. At the two passenger entrances these underframe sections are joined by channel flitch bars forming a step, and an angle steel truss welded to the undersides of the flitch bars gives the necessary stiffening to the broken underframe construction.

The main body pillars are of 14-gauge copper bearing steel of U section, braced by similar section rails. Where extra strength is required, as in the case of door pillars, light rolled-steel joists are used. The roof sticks and longitudinals are of 18-gauge pressed U section, and the whole of the framing is welded together with suitable stiffening gussets where necessary to give rigidity to the structure.

The side and roof panelling is of 16-gauge copper bearing steel, welded to the body structure. The inside of the panelling and of the body framing is sprayed with an adhesive and then covered with wool flock for the purpose of reducing noise.

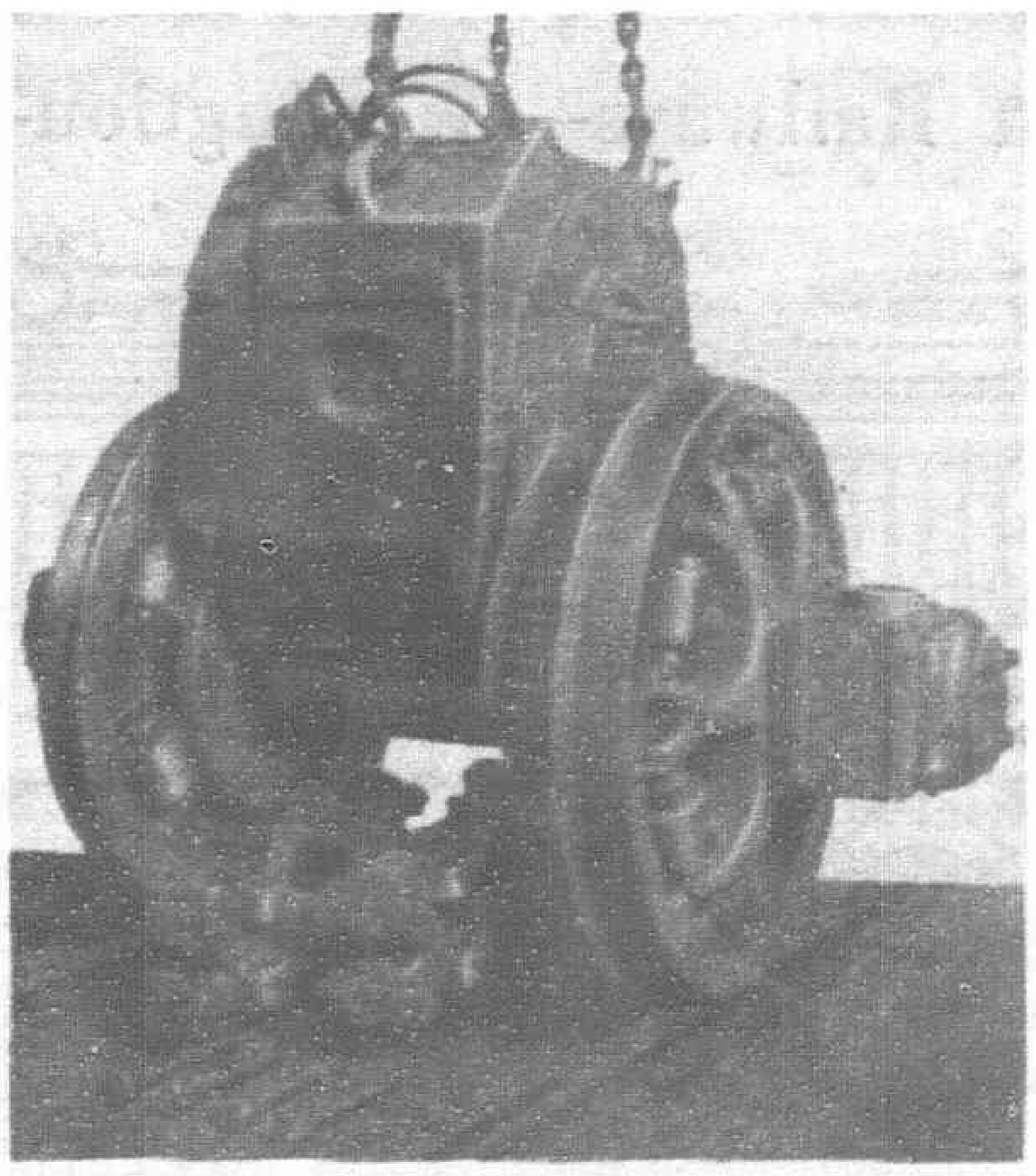
Dovetailed sheet-steel flooring is welded to the underframes, the dovetailed section of the sheeting providing a locking device for the Induroleum compound floor laid on top.

The interior panelling is carried out in light brown rexine, the wood mouldings are polished mahogany, and all interior metal fittings are chromium plated.

The coaches are heated electrically by ten 500-watt heaters fitted along each side of the coach. Each heater is wound for 150-volt, the set of ten in series on each coach side being supplied from the line. Each trailer coach is supplied from one adjacent motor coach.

The coach lighting is supplied at 120-volt from the motor generator set and battery. Provision is made for emergency lighting from the battery only, for this purpose one-half the coach lights together with the headlight, tail and marker lights are connected direct to the battery.

The passenger entrance doors are electro-pneumatically operated and their opening and closing is under the control of the guard, who can operate all doors on a train from any passenger entrance, where door control boxes are located. These door control boxes are inoperable, however, without the use of a guard's key, it is not possible therefore, for the doors to be opened or closed by passengers.



Track wheels showing spring cup quill drive

A third push button in the door control boxes enables the guard to give the driver both light and buzzer signals to indicate that the train is ready to start. As a further safeguard, however, a power control relay interrupts the control supply until all doors are completely closed. This relay may be short circuited by a sealed switch, in the event of a failure of the door gear making it impossible to start a train.

Bogies and Brakes

The bogies are of welded plate-frame construction with plate and rolled-steel cross members. The design incorporates a swing bolster with a cast-steel center pivot and cast-iron side bearers, and supported on double-helical springs. The axle-box guides are fitted with renewable manganese steel liners. The bearings are S.K.F. roller type, the boxes form seatings for the laminated leaf bogie springs. Adjustable screwed hangers secure the ends of the springs to the bogie side frames.

The coaches are fitted with Westinghouse interlocked electro-pneumatic brakes. There is one brake cylinder, fixed to the underframe per coach, from which normal brake rigging applies the braking pressure to brake blocks on each side of each wheel.

Air pressure is supplied from a 25-cubic feet Westinghouse compressor driven by a 1,500-volt electric motor.

The coaches are fitted with track-operated automatic train stops, trip gear being secured to bogie axle boxes at both ends of the motor coach and at the driving end of the trailer coach.

The two traction motors in each bogie of the motor coach are connected in permanent series for a contact wire pressure of 1,500-volt D.C. Each motor has a one-hour rating of 165 h.p. 750-volt and has one weak field tap.

The motors are nose suspended with rubber blocks in the two trucks of the motor coach; they drive through spur gearing consisting of a 17-tooth chrome-nickel-steel pinion and a 63-tooth sprung gear wheel. The gear wheel has a cast-steel boss and a two-part fish-plated chrome-nickel rim, power being transmitted from rim to boss through two helical springs which cushion the drive and relieve the motor of much of the road shock.

Roller bearings are provided for the armature shaft, and sleeve bearings for the axles.

The motor is self-ventilated, the cooling air is drawn in through metallic air filters mounted in the coach side. The air passes via sheet-metal ducting and a flexible leather bellows to the motor air intake and is discharged through screened outlets at the pinion-end of the motor frame.

Electro-pneumatically Operated

The control gear is of the unit switch type, electro-pneumatically operated. A bank of four line switches, connected two in series with each pair of motors, and 16 resistance and field contactors which are automatically controlled, provide the necessary accelerating notches. The master controller is provided with a shunting notch and three running notches, namely, full series, full parallel and weak field.

The whole of the 1,500-volt control gear is mounted in a specially designed interlocked high-tension compartment under the coach floor. This compartment is an innovation in undercar mounted equipment, in that it has been incorporated as part of the underframe structure and has enabled valuable economies in space and weight to be achieved. The space factor was one of great importance as the broken underframe construction, required to provide steps at the passenger entrances, minimized the length of underframe available for mounting equipment, if adequate provision were to be made for easy accessibility for maintenance purposes. This feature has been given considerable attention in the layout of the switch groups and relays, and it may be claimed that the maximum of accessibility has been provided, the whole of this equipment having been mounted between the passenger entrance steps at one side of the motor coach.

The low-tension supply at 120-volt for control gear, door and brake operation, and coach lighting is provided by a 4 kw. motor generator set. Emergency supply is available from a 53-cell lead acid battery, which is arranged to float across the generator terminals. The equipment on the low-tension supply panel includes a voltage regulator and reverse current protection for the battery.

Driving cabs have been provided at both ends of the motor coach and at one end of the trailer coach. Owing to the demand for the maximum of passenger seating accommodation, the cabs occupy only the space between the coach side and the center end door, a width of three feet and a depth of four feet from front to back being allowed.

The cab equipment includes the master controller, electro-pneumatic brake controller and low-tension controller switches. In addition a color-light signal box is mounted ahead of the driver giving visual indication that the pneumatically controlled passenger doors are closed for starting. A power control relay is fitted in one cab of the motor coach to interrupt the control supply until passenger doors are fully closed throughout the train.

By means of a push button switch, the driver is given the option of two different rates of acceleration, the switch operating a shunt coil in the current limit relay.

Current is collected from the overhead contact wire by a double-pan light-weight pantograph mounted at one end of the coach roof. The pantograph incorporates anti-fouling tubes and is suitable for operation at heights varying from 12-ft. 3-in. to 18-ft. above rail.

The roof-mounted equipment is completed by a choke coil, condenser-type lightning arrestor and a main fuse.

Both locomotive and motor-coach contracts have been carried out subject to the inspection of Ranald J. Harvey, Esq., M.I.E.E., Consulting Engineer to the New Zealand Government.

Industrial Development of Netherlands East Indies

(Continued from page 399)

and ample harbor. There is in addition to the oil refinery, a sulphuric acid recovery plant and petroleum by-product plants. This place seems to be particularly suited for the location of such heavy industries as might be necessary to furnish basic chemicals for Java and the other islands when they are industrially developed.

This was our last call in the Dutch East Indies and we found it difficult to avoid the impression that the N.E.I. is a potential industrial center for South-eastern Asia.

The industriousness and good sense of the Dutch people are apparent on every hand and one cannot praise them too much for the paternalism which they show toward the natives and the care which they take to protect their happy improvidence from exploitation by Chinese, Arabs or others. Public health has received ample consideration and there are numerous hospitals throughout the N.E.I., the death rate among the natives being lower than in India or the Philippines.

In the development of industries in the N.E.I. the government not only maintains its traditional open door policy, but encourages other nationals, as well as the Dutch, to start industrial enterprises in the archipelago, provided always that no one country shall acquire interests exceeding those of Holland.

The principle involved in this open door policy is, as explained to the writer, one of defense, it being considered by the Dutch an insurance against any attempt in the future of any one country seizing the inlands if there is a community of interests among several nations.

In addition to this factor it is quite apparent that the Dutch are not prepared at this time to invest additional large amounts of money in the N.E.I., and also it is clear to them that they can protect what they have already invested in the archipelago if others will share in its industrial development. The government now allows equipment for the establishment of new industries or for the extension of old ones to enter the country duty free.

Significant Import Trend

Another phase of the new policy of the industrialization of the N.E.I. is that it is aimed to be for self supply only and not designed to produce a surplus for export. This is no doubt wise, but as long as the N.E.I. are importing such considerable quantities of rice from Siam and French Indo-China it is reasonable to expect a fair market in those territories for articles which can be produced in Java more economically than in either Siam or French Indo-China.

The whole economic trend during the past few years has been for both imports to and exports from the N.E.I. to increase with Oriental countries and decrease with Western countries. That this trend is likely to become permanent is the opinion of many observers, and the writer is of the opinion that if by any means China obtains a good government in the near future, the purchasing power of that country will be sufficient to absorb most of the manufactured products of Japan and thus cause no economic conflict between Japan and the N.E.I., by reason of the industrialization of the latter country.

Can Moscow Win the War?

(Continued from page 366)

probably can be accepted that the Tokyo Government would be willing to treat with Wang Ching-wei as head of the Chinese Government. The importance of the truth or falsity of the report of Chiang Kai-shek's resignation is to be seen in this situation, and the most ardent follower of Chiang Kai-shek must admit that his removal at this juncture would go far to clarify the whole outlook.

In what will happen in China in coming months Great Britain, the United States and France are directly concerned, and affairs have come to the pass where one or the other of these Powers will have to take action, first to effect an armistice, and then to open discussions to restore peace. All of these great overseas Powers have extensive interests in China to conserve. All of them have suffered huge losses through the months of conflict in China. If any of them placed the least reliance on the use of force to protect their holdings, the guns would have gone into action long ago. Not only do these Occidental Powers stand unalterably opposed to armed conflict anywhere, but it is certain they will adopt any possible honorable expedient to avoid armed strife. If armed intervention is ruled out, as it must be, then the Occidental Powers, in their own interests can only extend help in one form or another for the vast task of rebuilding and reconstruction in China. In this way they will safeguard their own interests and it is assured that they will profit hugely from the vast work to be done, for whatever artificial or other advantages Japan may possess, the immensity of the reconstruction problem in China takes it far beyond the scope of Japan's own resources. The participation of the Occidental Powers in the work is essential, if it is to be performed for the best advantage of all the Powers concerned. The ultimate greatest winner will be China.—*val*

Tokyo Airport

The Aeronautical Bureau here has decided to extend the Tokyo airport to cover the area of 300,000 tsubo by the end of 1940 by filling up the sea area of 130,000 tsubo in the eastern and northern part of the port, because the present airdrome seems a little narrow to be called an international airport, despite its area of 170,000 tsubo, including 10,000 tsubo in the southern part of the port. Construction work will be begun next year on an estimated outlay of Y.4,300,000.

Engineering Notes

RAILWAYS

LUNG FENG ROAD.—The newly constructed Lung Feng line extending 22.4 kilometers from Lungtanshan to Tafengman on the Sungari was opened for formal business from October 1, since the construction of the line, which has been under provisional business has been completed.

NEW MANCHURIA LINE.—Completing all necessary preparations, the newly completed railway between Kingcheng and Tiehli (Tiehshanpao), 47.7 kilometers in length, was opened for provisional traffic as from October 1. The new railway runs eastward from Suihua, which is on the Pinpeh line to the north of Harbin. The provisional operation of the line between Suihua and Kingcheng has been made since May this year. The regions along the new railway are known for their fertile soil and almost inexhaustible forestry resources.

MINING

GOLD MINING CO.—With a view to exploiting newly discovered gold deposits, the Manchuria Gold Mining Company has decided to hold a general shareholders meeting late in October to bring forward a project for an increase of capital. The company desires to have the capital increased from the present twelve million yuan to between fifty and eighty million yuan, because the present capital is only enough to buy ships for gold mining scheduled for next year. This plan is expected to be approved by the government.

COAL FOR PEKING.—The Kochu Kungssu is planning to distribute 22,500 tons of coal to the markets in the Peking-Tientsin district during October, as compared with 18,000 tons in September because of the continued coal shortage in that territory. A total of 750 carloads will be delivered daily as follows:

	Cars	*Tons*
Chunghsing Coal	14	420
Tatung Coal.	3	90
Liuhokou Coal	4	120
Hsiahuayuan Coal	3	90
Chinhsing Coal	1	30
Total	25	750
Total in October		22,500

INDUSTRIAL

PLAN PULP FIRM.—A large pulp manufacturing company, with its capital held by the Toyo Spinning Co. will be established at Chiamussu for making pulp from willow, which grows abundantly in this district. The site for its factory will be purchased within this year, and construction will start soon after the freezing season. The capital of the company, will be some Y.30,000,000 it is learned from a reliable source.

NEW HONGKONG PLANTS.—Hongkong's ascendancy as an industrial center is borne out by plans for the erection of six big factories by Chinese industrialists from Shanghai. These are the New Asiatic Chemical Works, the Mayar Silk Mills, the Kuopin Soap Factory of the International Dispensary, the Tien Lee Synthetic Nitrogen Products Company, the Tien Yuan Electrical Chemical Works and the China Commercial Advertising and Printing Co. Some of them are moving down from Shanghai, whilst others are new establishments.

JAPAN'S EXPORT TRADE.—According to *Reuter*, a sharp decrease in Japan's export trade was recently announced at Tokyo by Mr. Ikeda, Minister of Finance. Mr. Ikeda, who is concurrently Minister of Commerce and Industry, said exports from January to May, inclusive, totalled Y. 1,068,000,000 (about £66,000,000), representing a decrease of 18 per cent on the corresponding period in 1937. If exports to the yen block including Kwantung leased territory, Manchoukuo and North and Central China, were deducted from this figure, Japan's net exports amounted to only Y.583,000,000 (about £36,000,000)—a decrease of 35 per cent as compared with 1937.

FORESTRY CO.—With a view to ensuring smooth distribution of timber and control of timber price in Manchoukuo, a bill for the revision of the Manchuria Forestry Co. Law was passed in October, at the Privy Council meeting, and is expected to be promulgated in the near future. According to the revision, the structure of the company is strengthened so that the latter may control the distribution of timber and its price, facilitate the distribution of building materials and extend loans to those who engaged in lumbering. The company's lumbering enterprise is to be separated hereafter. The capital of the company under the newly revised Law is to be increased from five million to thirty million yuan, and the increased stock of twenty-five million yuan is allotted as follows: 12,500,000 yuan to the Manchoukuo Government, 3,750,000 yuan to the S.M.R. Co., 3,750,000 yuan to the Kyoei Enterprise Co. (a joint Oji and Okura firm), and 5,000,000 yuan to the Oriental Development Co.

RAYON EXPORTS.—Exports of rayon yarn from Japan during the first half of 1938 totalled only 10,154,266 lb., against 25,700,600 lb. in the corresponding period of 1937. Exports of piece-goods totalled 172,334,850 square yards, against 239,631,367 square yards.

MALAYAN TRADE.—Malayan foreign trade is still declining. Imports during the first four months of this year, at £23,079,000 were roughly 12.2 per cent lower than in the same period of 1937, and exports, at £24,311,000 contracted by over 31.8 per cent. The decrease in imports is apparently still to be attributed to smaller purchases of raw materials.

FORMOSAN ALCOHOL.—Sugar manufacturers in Formosa have been making extraordinary efforts recently to increase their production of power alcohol, for which a large demand has arisen under the Japanese Government's fuel program. By the end of July, production had been geared up to a rate of 17,000 koku (1,000 koku equals 39,680 Imperial gallons) a day.

JAPAN BUYS BAUXITE.—Despite difficulties in obtaining foreign exchange, the Japanese Government has given permission for the importation of bauxite from the Netherlands Indies. Bauxite is used extensively in the manufacture of armaments. Since the beginning of August considerable quantities of bauxite have been shipped from the island of Bintan to Japan, and it is believed that further large shipments have been arranged.

IRON WORKS.—In view of the importance of the iron industry for the rehabilitation of Central China, the authorities on the spot recently decided to reopen the Hoshing Iron Works in Pootung which has been closed since the outbreak of the hostilities in the Shanghai area. The management of the Hoshing Iron Works will be entrusted entirely with the Chungshan Iron Works, and it will be the first iron works to be operated under Japanese capital in Central China.

NEW PULP MILL.—According to a Stockholm report, a firm of exporters there has been commissioned by the Japanese authorities to purchase in Sweden the necessary plant for the construction of a large rayon pulp mill in Manchoukuo. It is understood that the mill will utilize soyabean stalks and pods as raw material. Capital of the new company will be Y.10,000,000; part of the purchase price of the Swedish machinery will be paid for by the sale of shares in the company.

TRADE PACT.—As from September 1, the Italian trade agreement with Japan and Manchoukuo came into force. It will operate for one year.

The agreement is based on an estimated total aggregate yearly trade between the three countries of 176,000,000 lire (£1,913,000). Italian imports will consist mainly of soya beans, soya oil and solid fish oil, while exports will include machinery, motor-cars, wines, woollens and textiles. A quota is also reserved for orders for war supplies, mainly aeroplanes.

MAKES MORE SOAP.—The Kanegafuchi Spinning Company, a 60-million yen concern, has decided to acquire financial participation in the whaling industry. The company has been interested in the manufacture of soaps for many years. First, it made its own textile soaps, but now it is also a factor in the laundry and toilet-soap market. As a result of negotiations with the Sumatra Development Company, the Kanegafuchi concern has purchased 100,000 out of 400,000 shares of the Kyokuyo Whaling Company, a Sumatra Development subsidiary.

PULP SURVEY.—A survey by the Tokyo Forestry Bureau of the Ministry of Agriculture, shows that consumption of wood pulp in Japan reached 1,301,135 long tons in 1937, exclusive of the consumption in the transparent paper industry, an increase of 250 per cent over pulp consumption in 1926. Consumption of wood pulp for paper manufacture increased from 606,325 long tons in 1932 to 1,000,446 in 1937; for rayon manufacture from 41,541 to 195,720 and for staple fibre manufacture from 332 to 105,469. For transparent paper manufacture consumption of wood pulp increased from 527 long tons in 1932 to 4,299 long tons in 1936.

NORTH CHINA FOUNDRY.—As a subsidiary firm of the North China Development Company, the establishment of the Huapei (North China) Iron Works, tentatively named, is being planned under Sino-Japanese joint management. Preparations to that effect have been making progress between the authorities concerned on the spot and Mr. G. Yamagata, Director of the Nippon Iron Works, and Mr. N. Matsushita, Managing Director of the Japan Steel Tube Company. Apart from the aforementioned iron works in the making, another iron company is expected to be established with capital of Y.10 million in the near future, probably simultaneously with the completion of the Shihchingshan Iron Works early in November this year in Peking. Already completing various arrangements to that effect among representatives of the Nippon Iron Works, the Japan Steel Tube Company the Tsurumi Steel and Shipbuilding Company, the Sumitomo Metal Industry Company and the Kochu Kungssu, a general inaugural meeting for the projected iron company is scheduled to take place shortly. The company, however, is expected to be merged will the Huapei (North China) Iron Works when it comes into being in the future.